

4

1 SEQUENCE LISTING

<110> Kenneth W. Dobie <120> ANTISENSE MODULATION OF NOD1 EXPRESSION <130> RTS-0337 <140> US/10/006,883 <141> 2001-12-05 <160> 96 <210> 1 <211> 20 <212> DNA <213> Artificial Sequence <220> <223> Antisense Oligonucleotide <400> 1 20 tccgtcatcg ctcctcaggg <210> 2 <211> 20 <212> DNA <213> Artificial Sequence <220> <223> Antisense Oligonucleotide <400> 2 20 atgcattctg cccccaagga <210> 3 <211> 4390 <212> DNA <213> Homo sapiens <220> <221> CDS <222> (425)...(3286) ctctagctct cagcggctgc gaagtctgta aacctggtgg ccaagtgatt gtaagtcagg 60 agactttcct tcggtttctg cctttgatgg caatttcctt cggtttctgc ctttgatggc 120 aagaggtgga gattgtggcg gcgattacag agaacgtctg ggaagacaag ttgctgtttt 180 tatgggaatc gcaggcttgg aagagacaga agcaattcca gaaataaatt ggaaattgaa 240 gatttaaaca atgttgtttt aaaatattct aacttcaaag aatgatgcca gaaacttaaa 300 aaggggctgc gcagagtagc aggggccctg gagggcgcgg cctgaatcct gattgccctt 360

ctg	ctga	gag	gaca	cacg	ca g	ctga	agat	g aa	tttg	ggaa	aag	tago	cgc	ttgc	tactt	t 420
aac	Me	g ga t Gl 1	a ga u Gl	g ca u Gl	n Gl	с са у Ні 5	c ag s Se	t ga r Gl	g at u Me	t Gl	a at u Il 0	a at e Il	c cc e Pr	a tc o Se	a gag r Glu 15	469
						tta Leu										517
act Thr	cac His	atc Ile	cgc Arg 35	aat Asn	act Thr	cag Gln	tgt Cys	ctg Leu 40	gtg Val	gac Asp	aac Asn	ttg Leu	ctg Leu 45	Lys	aat Asn	565
						gat Asp										613
cag Gln	cct Pro 65	gac Asp	aag Lys	gtc Val	cgc Arg	aaa Lys 70	att Ile	ctg Leu	gac Asp	ctg Leu	gta Val 75	cag Gln	agc Ser	aag Lys	ggc Gly	661
						ttc Phe										709
						cct Pro										757
tcc Ser	ctg Leu	ctc Leu	act Thr 115	cag Gln	agc Ser	aaa Lys	gtc Val	gtg Val 120	gtc Val	aac Asn	act Thr	gac Asp	cca Pro 125	gtg Val	agc Ser	805
agg Arg	tat Tyr	acc Thr 130	cag Gln	cag Gln	ctg Leu	cga Arg	cac His 135	cat His	ctg Leu	ggc Gly	cgt Arg	gac Asp 140	tcc Ser	aag Lys	ttc Phe	853
gtg Val	ctg Leu 145	tgc Cys	tat Tyr	gcc Ala	cag Gln	aag Lys 150	gag Glu	gag Glu	ctg Leu	ctg Leu	ctg Leu 155	gag Glu	gag Glu	atc Ile	tac Tyr	901
atg Met 160	gac Asp	acc Thr	atc Ile	atg Met	gag Glu 165	ctg Leu	gtt Val	ggc Gly	ttc Phe	agc Ser 170	aat Asn	gag Glu	agc Ser	ctg Leu	ggc Gly 175	949
agc Ser	ctg Leu	aac Asn	agc Ser	ctg Leu 180	gcc Ala	tgc Cys	ctc Leu	ctg Leu	gac Asp 185	cac His	acc Thr	acc Thr	ggc Gly	atc Ile 190	ctc Leu	997
aat Asn	gag Glu	cag Gln	ggt Gly 195	gag Glu	acc Thr	atc Ile	ttc Phe	atc Ile 200	ctg Leu	ggt Gly	gat Asp	gct Ala	999 Gly 205	gtg Val	ggc Gly	1045
aag Lys	tcc Ser	atg Met 210	ctg Leu	cta Leu	cag Gln	cgg Arg	ctg Leu 215	cag Gln	agc Ser	ctc Leu	tgg Trp	gcc Ala 220	acg Thr	ggc Gly	cgg Arg	1093
cta	gac	gca	999	gtc	aaa	ttc	ttc	ttc	cac	ttt	cgc	tgc	cgc	atg	ttc	1141

Leu	Asp 225	Ala	Gly	Val		Phe 230	Phe	Phe	His	Phe	Arg 235	Cys	Arg	Met	Phe	
agc Ser 240	tgc Cys	ttc Phe	aag Lys	gaa Glu	agt Ser 245	gac Asp	agg Arg	ctg Leu	tgt Cys	ctg Leu 250	cag Gln	gac Asp	ctg Leu	ctc Leu	ttc Phe 255	1189
aag Lys	cac His	tac Tyr	tgc Cys	tac Tyr 260	cca Pro	gag Glu	cgg Arg	gac Asp	ccc Pro 265	gag Glu	gag Glu	gtg Val	ttt Phe	gcc Ala 270	ttc Phe	1237
ctg Leu	ctg Leu	cgc Arg	ttc Phe 275	ccc Pro	cac His	gtg Val	gcc Ala	ctc Leu 280	ttc Phe	acc Thr	ttc Phe	gat Asp	ggc Gly 285	ctg Leu	gac Asp	1285
gag Glu	ctg Leu	cac His 290	tcg Ser	gac Asp	ttg Leu	gac Asp	ctg Leu 295	agc Ser	cgc Arg	gtg Val	cct Pro	gac Asp 300	agc Ser	tcc Ser	tgc Cys	1333
ccc Pro	tgg Trp 305	gag Glu	cct Pro	gcc Ala	cac His	ccc Pro 310	ctg Leu	gtc Val	ttg Leu	ctg Leu	gcc Ala 315	aac Asn	ctg Leu	ctc Leu	agt Ser	1381
999 Gly 320	Lys	ctg Leu	ctc Leu	aag Lys	999 Gly 325	gct Ala	agc Ser	aag Lys	ctg Leu	ctc Leu 330	Inr	gcc Ala	cgc Arg	aca Thr	ggc Gly 335	1429
atc Ile	gag Glu	gto Val	ccg Pro	cgc Arg 340	cag Gln	ttc Phe	ctg Leu	cgg Arg	aag Lys 345	aag Lys	gtg Val	ctt Leu	ctc Leu	cgg Arg 350	ggc Gly	1477
ttc Phe	tcc Ser	ccc	ago Ser 355	His	ctg Leu	cgc Arg	gcc Ala	tat Tyr 360	Ala	agg Arg	g agg g Arg	atg Met	ttc Phe 365	ccc Pro	gag Glu	1525
cgg Arg	gcc Ala	cto Lev	ı Glr	gac Asp	cgc Arg	ctg Leu	cto Leu	ı Ser	cag Gln	cto Leu	g gaç ı Glu	gcc Ala 380	ASI	ccc Pro	aac Asn	1573
cto Lev	tgc Cys 385	s Se	c cto r Lei	g tgo ı Cys	tct Ser	gtg Val	Pro	cto Lev	tto Phe	tgo Cys	c tgg s Trp 395) TIE	ato E Ile	tto Phe	cgg	1621
tgo Cys	s Phe	c cag	g cad n Hi:	c tto s Phe	c cgt Arg 405	y Ala	gco Ala	ttt a Phe	gaa e Glu	999 1 Gly 419	y Sei	a cca r Pro	a cag	g ctg n Leu	ccc Pro 415	1669
ga As	c tgo p Cys	c ac	g ate	g aco	r Lev	g aca	a gat	t gto p Val	tto l Phe 425	е ье	c ctq u Le	g gto u Val	c act	t gag r Glu 430	g gtc l Val	1717
ca Hi	t cto s Le	g aa u As	c ag n Ar 43	g Me	g caq t Gli	g cco	c ag	c age r Se: 44	r Le	g gt ı Va	g ca 1 Gl:	g cgg	g aa g As 44	n Im	a cgc c Arg	1765
ag Se	c cc r Pr	a gt o Va 45	l Gl	g ac	c ct r Le	c ca u Hi	c gc s Al 45	a Gl	c cgg	g ga g As	c ac p Th	t ctor r Leo 46	u Cy	c tco	g ctg r Leu	1813

Gly aaa	cag Gln 465	gtg Val	gcc Ala	cac His	cgg Arg	ggc Gly 470	atg Met	gag Glu	aag Lys	agc Ser	ctc Leu 475	ttt Phe	gtc Val	ttc Phe	acc Thr	1861
cag Gln 480	gag Glu	gag Glu	gtg Val	cag Gln	gcc Ala 485	tcc Ser	Gly aaa	ctg Leu	cag Gln	gag Glu 490	aga Arg	gac Asp	atg Met	cag Gln	ctg Leu 495	1909
ggc Gly	ttc Phe	ctg Leu	cgg Arg	gct Ala 500	ttg Leu	ccg Pro	gag Glu	ctg Leu	ggc Gly 505	ccc Pro	Gly aaa	ggt Gly	gac Asp	cag Gln 510	cag Gln	1957
tcc Ser	tat Tyr	gag Glu	ttt Phe 515	ttc Phe	cac His	ctc Leu	acc Thr	ctc Leu 520	cag Gln	gcc Ala	ttc Phe	ttt Phe	aca Thr 525	gcc Ala	ttc Phe	2005
ttc Phe	ctc Leu	gtg Val 530	ctg Leu	gac Asp	gac Asp	agg Arg	gtg Val 535	ggc Gly	act Thr	cag Gln	gag Glu	ctg Leu 540	ctc Leu	agg Arg	ttc Phe	2053
ttc Phe	cag Gln 545	gag Glu	tgg Trp	atg Met	ccc Pro	cct Pro 550	gcg Ala	Gly aaa	gca Ala	gcg Ala	acc Thr 555	acg Thr	tcc Ser	tgc Cys	tat Tyr	2101
cct Pro 560	ccc Pro	ttc Phe	ctc Leu	ccg Pro	ttc Phe 565	cag Gln	tgc Cys	ctg Leu	cag Gln	ggc Gly 570	agt Ser	ggt Gly	ccg Pro	gcg Ala	cgg Arg 575	2149
gaa Glu	gac Asp	ctc Leu	ttc Phe	aag Lys 580	aac Asn	aag Lys	gat Asp	cac His	ttc Phe 585	cag Gln	ttc Phe	acc Thr	aac Asn	ctc Leu 590	ttc Phe	2197
ctg Leu	tgc Cys	Gly 999	ctg Leu 595	ttg Leu	tcc Ser	aaa Lys	gcc Ala	aaa Lys 600	cag Gln	aaa Lys	ctc Leu	ctg Leu	cgg Arg 605	cat His	ctg Leu	2245
gtg Val	ccc Pro	gcg Ala 610	gca Ala	gcc Ala	ctg Leu	agg Arg	aga Arg 615	aag Lys	cgc Arg	aag Lys	gcc Ala	ctg Leu 620	tgg Trp	gca Ala	cac His	2293
ctg Leu	ttt Phe 625	Ser	agc Ser	ctg Leu	cgg Arg	ggc Gly 630	tac Tyr	ctg Leu	aag Lys	agc Ser	ctg Leu 635	ccc Pro	cgc Arg	gtt Val	cag Gln	2341
gtc Val 640	Glu	agc Ser	ttc Phe	aac Asn	cag Gln 645	gtg Val	cag Gln	gcc Ala	atg Met	ccc Pro 650	Thr	ttc Phe	atc Ile	tgg Trp	atg Met 655	2389
ctg Leu	cgc Arg	tgc Cys	atc Ile	tac Tyr 660	Glu	aca Thr	cag Gln	agc Ser	cag Gln 665	. Lys	gtg Val	Gly aaa	cag Gln	ctg Leu 670	gcg Ala	2437
gcc Ala	agg Arg	ggc Gly	ato Ile 675	Cys	gcc	aac Asn	tac Tyr	cto Leu 680	Lys	ctg Leu	acc Thr	tac Tyr	tgc Cys 685	Asn	gcc Ala	2485
tgc Cys	tcg Ser	gcc Ala 690	Asp	tgc Cys	agc Ser	gcc Ala	cto Leu 695	Ser	ttc Phe	gto Val	ctg Leu	cat His 700	His	ttc Phe	ccc Pro	2533

_		-	_		gac Asp		_						_			2581
			_	_	ccc Pro 725	_		_	_			_		_		2629
_	_		_		act Thr	_			-							2677
_					att Ile				_						_	2725
		_	_		gcc Ala			-				_	_		_	2773
			_		ctt Leu		_							-	-	2821
		_			gcc Ala 805	_	_		_		_					2869
	_		_		ggc Gly			_		_	-		-			2917
	-		_	_	cgg Arg				_	_			_	_		2965
					tcc Ser		_			_	_				_	3013
_	_	_		_	tct Ser		-		_		_				_	3061
					gca Ala 885											3109
_	_		_		tta Leu				_		_			_	_	3157
		_	_	_	gca Ala	_			_	_						3205
					gga Gly											3253

930 935 940

tat gaa gat gag aag cgg att atc tgt ttc tga gaggatgctt tcctgttcat 3306 Tyr Glu Asp Glu Lys Arg Ile Ile Cys Phe 950 ggggtttttg ccctggagcc tcagcagcaa atgccactct gggcagtctt ttgtgtcagt 3366 gtcttaaagg ggcctgcgca ggcgggacta tcaggagtcc actgcctcca tgatgcaagc 3426 cagetteetg tgeagaaggt etggteggea aacteeetaa gtaeeegeta caattetgea gaaaaagaat gtgtcttgcg agctgttgta gttacagtaa atacactgtg aagagacttt 3606 attgcctatt ataattattt ttatctgaag ctagaggaat aaagctgtga gcaaacagag 3666 gaggccagcc tcacctcatt ccaacacctg ccatagggac caacgggagc gagttggtca ccqctctttt cattgaagag ttgaggatgt ggcacaaagt tggtgccaag cttcttgaat 3726 3786 aaaacgtgtt tgatggatta gtattatacc tgaaatattt tcttccttct cagcactttc ccatgtattg atactggtcc cacttcacag ctggagacac cggagtatgt gcagtgtggg 3846 atttgactcc tccaaggttt tgtggaaagt taatgtcaag gaaaggatgc accacgggct 3906 tttaatttta atcctggagt ctcactgtct gctggcaaag atagagaatg ccctcagctc 4026 ttagctggtc taagaatgac gatgccttca aaatgctgct tccactcagg gcttctcctc tgctaggcta ccctcctcta gaaggctgag taccatgggc tacagtgtct ggccttggga 4086 agaagtgatt ctgtccctcc aaagaaatag ggcatggctt gcccctgtgg ccctggcatc 4206 caaatggctg cttttgtctc ccttacctcg tgaagagggg aagtctcttc ctgcctccca 4266 agcagetgaa gggtgaetaa aegggegeea agaeteaggg gateggetgg gaaetgggee 4326 aqcaqaqcat qttqqacacc ccccaccatg gtgggcttgt ggtggctgct ccatgagggt 4386 gggggtgata ctactagatc acttgteete ttgeeegete atttgttaat aaaataetga 4390 aaac

19

<210> 4 <211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> PCR Primer

<400> 4

gcaggcggga ctatcagga

<210> 5

<211> 21

<212> DNA <213> Artificial Sequence	
<220> <223> PCR Primer	
<400> 5 agtttgccga ccagacette t	21
<210> 6 <211> 24	
<212> DNA <213> Artificial Sequence	
<220> <223> PCR Probe	
<400> 6 tccactgcct ccatgatgca agcc	24
<210> 7 <211> 19 <212> DNA <213> Artificial Sequence	
<220> <223> PCR Primer	
<400> 7 gaaggtgaag gtcggagtc	19
<210> 8 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> PCR Primer	
<400> 8 gaagatggtg atgggatttc	20
<210> 9 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> PCR Probe	
<400> 9 caagcttccc gttctcagcc	20

<210> 10

```
<211> 21580
<212> DNA
<213> Homo sapiens

<220>
<221> exon:intron junction
<222> (15377)...(15378)
<223> exon lb:intron lb

<220>
<221> exon
<222> (18941)...(19081)
<223> exon 2
```

<400> 10 tggccagggg ctcaccetet cgcaccggge gtccetetge gegcagette tetegeecee 60 ccgcgccaga cccgggcgaa tggcagcacc gtgggaccct gccttgaccg ccccgccct 120 teggeggeet eteceageag eeggeagget ettgggegeg eeaacagagg ggegeggetg 180 eggetgtagt egeageeagt teeegtteeg ggeeegegag geageegeee eggteetgee 240 cctccctcgc gctactgcgg gagcagcgtc ctcccgggcc acggcgcttc ccggccccgg 300 360 cgtccccgga ccatggcgct ctccgggctc tcctctagct ctcagcggct gcgaagtctg 420 taaacctggt ggccaagtaa gtcccagcga ctggggattc gcgcggggca ggccctttct 480 gaggtcctgg gcgctgcgag tgaggaggcg cagggaggcg ggatttgcgt gcgggcggaa cgcagcgcgg ctctggagga gctctgggtg gaaccaagcg gagaaacccg cgagtttgaa 540 600 gcatgtagcg aaagttgaga gggatgaact tcacagtcag cggaatcgtt tatcccactg 660 tggtcgaacg caggggttct caatcgtgcc agcagcttag aaccacctgg ggagctttta 720 aaatccagat atccaggctg caccctagat caattccatc agaatctcac ggagtcagac ccaggectec gtatetttta aaageteece aagtgattee agtgtgeage cagegttega 780 gggtttgtgg caaaggctgg aagggcagac aggggccttc atggagtccc gcctgcagac 840 900 gggacagcag ctcccagtgt cctgcttggt cctggagaga gggtgagaac ttcccttggg tttcatgctc cacaaagtaa ggaaatgaga caatgcttgg caaggtcgcc tgaatatcac 960 attcaaaaac gcctccaatg tgtgcagttg ttttggcaca ttgtgaaaaa cataggaaat 1020 gacagaggtt gatgtctcat tagctctgca ttctaggaaa catttcggtt gttggtgttt gaaattaagt ctggggaagc taagctagta aacccatggc cttgatgact tctggccttt 1140 1200 ctgctttaag ggtgaagcca gggccgggcg cggtggctca cgcctgtaat cccagcactt tgggaggcca aggcaggcgg atcacctgag gtcgagagtt cgagaccagc ctggcccaac 1260 atgeetgtaa teecagetae tegggagget gaageaggag aattgettga accegggagg 1440 cagaggttgc agtgagccga gatcgccctg ttgcgctcca gcctgggcaa caagagcaaa actccgtcaa aaacaaacaa acaaacaaaa aacaaaaaaa cggtgaagcc agaagtcgtg 1500 1560 cttgccaaag ggtcgagttt gttctccctc aaagcccctg ttgaagattg aactatcact 1620 ttcagggaag agtaaaagag taactccacg atgcatctta gagaggagtg gattccctgt teteacecag gettagatge caggggecag gtagetgaaa tecaggeaaa ecaggeattg 1680 1740 acaaagtaca gacttctacc gaatatgcca gacagataag caagctgtgt ttaaaacaaa 1800 cagcagagtg gtagaagagg gctctttcaa atattgtaag aagagtaggt tttatttttg 1860 tggagtggag aaataagttc acgetttgga acceatcaaa tetgggteaa aacteggatt 1920 etgteactte tatgetgtga etttgggeaa gtteettgae eteteeaage eeetgtttte ccacctgtaa aataaagagc aaccctctcc tgaggctagc atagttcagc gagatgatgt 1980 gcatcacaca cctggaaggt ggtggcgctg gcaggtgctc tggcagaggt agttattaga 2040 2100 cactggagtg gcagtttgtg cccgttaatt gtttacttag tacagccact atgagggaga atgtctataa aatgttccct tcaacgctcc attccttctc ctgccctgct gccccgctca 2160 2220 gggccttagc gggctttaag tctgaaatct taggctgcaa atcccctcag tcccccaggg cgtattaatg gctctggaat acagttttac tgcatgtgat aggaatgaat attttgacac 2280 2340 acacactc aaaagctgtt cttaatcttg agacttcctc ctctctgttg ccacatatat 2400 atcttttaaa tggctttcca agaaagctgg gctgtgcaca gtgtctcaga attagtgtat gtgcacacac acgcacgttg ctccctgctg acaacatcct cagaccatac ccttggtgtt 2460 cctgttttgc tcctgactct tggcctaggg acagtgaatc tttcttgaat gaccaaggac 2520 agtcagggat ctgaggaagg gagaacccaa attctacaat tgctgatgcc tgcgtcccag 2580 2640 etggaacttt accetggtac gtgetetgtg cateatggat ggteactttg atcetaacag cagtgctgtt tagattagac atcagaaata gaaacagtaa gtaatatagg cataaagatc 2700 2760 aagtgttttt ctagtgtatg tgtgatcact gatatttgct tacacaagac tatcaaagtc 2820 ttatctctta ttcaaagaaa aggattcaat atttgttcaa aatctaagat atgaacgtag gatttaaggt ttaagttact agtttcttct atcattctta ttattggggg gattttttt 2880 aggcaagaag aaattagaaa agctaaaatg tgtacttatg ctgaattttt gtcatgcaga 2940 ggctctaggt attttgcaag ttttcagaag tcccattttc ttttatcttc tagggacagt 3000 cagttgcatg tcacacaagg ggcctccttt gatttatcca aaaggtctga cctggtttct 3060

ggaaaaactc tttagcgcat caaatactcg ttgagggcaa gtgttgtttc taaacttgac 3120 tettgtggtg agaggtgagt agteaetgge atgteagtta getgaeattt tttacecaeg 3180 ctagaaagtt cattcaggca agacttcctg gcttgaactc ttatttaaac atgtgtttta 3240 tetggaactg ccacagteca aactgtggge agagatteet gtgcagagtt ggetaaggea 3300 ggcatgccac eggecettet ettegecate etceetgtet etggagecat tgagecaace 3360 ggggatgatg ccactctgaa gggatctcac cttggtcctc taatggggca gagttccctg 3420 atgagggatg cacgtcctta gagccaacaa ggcaattttg tattatactg catggaaatt 3480 aaaagttact ctccagtaaa ctgccacttt agaatttgtt ttactgaagc gtccttttcc 3540 tctaaattat agagcactgt agtaagggcc cagataattt caaagtgagc accagattag 3600 tgccagattt tggcagatta agattttaat aaaacatgaa cattcacctt gattacattt 3660 gtttcagaaa gttgatgtcc cttggccttc tgttctgtca ttgccaccat acaggttagg 3720 gtcagaattg ggagaatgta gtcatttggt agatattttc agagccacat gcaactgggc 3780 ctggcagtca catattgcta aggaaacgcc ttacatgata gcagagctga gagcagatga 3840 tgatttactt gggagagtat tcgttttcta attcccaaaa gattaaaagt ctaatgagta 3900 agaacttccc ctgcttcttg taacacatgc ccagattgct gcctatgacc tcaaaaccaa 3960 accttettgg aaggaactgg gggaaageta ggettttttg geaggggata teetaactee 4020 ttacaacaca ggccccttca gtgagtgggt catttctgga ctccatttaa caaagctagt 4080 gtttcatact taatatgaaa acaggcgtgt tgatgatttc aaatagagat gttgggtcta 4140 taaagtatac cagacatgca gggctgaaat ggaagaaaca atgggttttg gagtcagaac 4200 caggatecaa tteetgtttt atteettaet teaggggtee ecaateceta ggecatggae 4260 caataccagt eggtggeete ttaggtggge egeacageag aaggtgagea geagtgagea 4320 agcattaccg cctgaactct gcctcctgtc agatcagcgg tggcatcaga ttctcatgcg 4380 aggggaaccc tatggtgaac cgcacacgcg agggatctag gctgcacatt ccttatgaga 4440 atttaatgee tgatgatetg aggtagaeag ttteateeta aaaegatete eeetgtgeee 4500 ctactcgccg ctgtctgtgg aaaaattgtc ttccatgaaa ccagttcctc gtgccaaaaa 4560 ggttggggat cactgcctta actaactgtg tgaccttcac caacatactt aaccactcca 4620 actictgtgtc ctcctttgta aactagttac aataatgett teettgetgg geagttttea 4680 gtatttgatg agctaatcta tgtaaagtgc ttagcacatc acccagcttc tagtaagtca 4740 tgattatgat gataaagatt atgatgatta ctttggttcc agggctggtc tttccttctc 4800 ctagttgtgt gacttcagat aaggttttta atcttcttga gccttggctt ttgaatctgt 4860

aaaatgggct aactctacct atctggaaag attgctttga ggcttgattt gattaaatga aatgatgaca ggcctgatct ggtagaccct aaataagaat agcatttaca tagacttcct 4980 gtgtcccaca ctggtctaag agtttagggt ttttgttgtt tgtttttagc tcattttatc 5040 ttcccagcgc ccctgtgcag tggttatcat ttcccttgtt ttatagagga gacaactgag 5100 gctcaacaag attaaataac tagcccaaag tctatcccag gacttgaagc agagtccctg 5160 ttettaacca etgececage tgeteagtga gtacceccae ecetgettat tetacetace 5220 tectgatgee catetectge cattaacagt cagatgtget tatgetetgt gtagggeeat 5280 atttctggaa acagagcccc tgcttccaaa gagcagctta cttaggaagt gaaagtggca 5340 gctcactcct cctgtcgcct cctcccactt ccagataaca ttaaacctca tccattgctt 5400 aggctggtta atatcaactg gaaaaaaaaa tctgataccg atattgacta acattattag 5460 agtgggttgc aatgttagtt ttgagataaa tgtcatctcg atgcactgag attgttagcc 5520 tgtgtgtaat aaaacatgcc ttcacccaga cagatgtggg gggtgtttgg aagacagaaa 5580 ccaggcctag gagatcccag gttgagactc aggtggacag caacagtatt gaaaataata 5640 ttacatcaaa ggtgcagtgg tctgttctaa gtacaccacc ttttctgaca ttccttactc 5700 atcctccctc teetttacce cagtggettt ggeetettet tgagttetgg caatetteee 5760 tgaggtetgg gteagtggaa tttgggggee cagaaaggea aatteteagt tgagtgaggt 5820 gtggcttctt tagcattcct gataatgagg tagtaattgc ttttctggct ttctgtgtgt 5880 gtgaagtgct ctgctggccc cctaccctgg tgtggaaggc tgttagaaag ctatttatag 5940 ctcttggttc cttctggcac tttggggctt caattctgca acatgttaat tcaacaaata 6000 ttatcagaaa gtcttgctgg tgccaggagt ctactaagta cttggattac agcaatgaat 6060 gaaacagacc ctgcctctgg ccatatggaa ttttggaggct gccgggtgga gaggatgtct 6120 tagtcagett gggttgetaa aactateaca gaetggggga ettaageaac aaacatttat 6180 ctctcacagt tctgcaggct ggaagtgtga gacctggttg ccagcatggg agtttggtga 6240 ggaccctctt cctgatttgt gaaagaggtt tctcatgtct cttgctataa gggcactaat 6300 eccatcattg gggetecace eccaegacet catttaaace tatteacete ecaacageee 6360 tatctgtaaa caccatcaaa tcgggggttc tccctcacca tgtgaacttt ggagggacat 6420 aaacatcagt ccataagtag gaggttaggg cagtaagcac acaggtaaat acataattgt 6480 aacttgtgga aagtgcttta agtgaaaaca acagcatgtc atgagacagg agatcagagc 6540 agaactagaa ttaggagagt ctggggacgc ctctcaagga atgagccttt tcaactagga 6600

cttgggatga aaaaaagagt gaaatcatgc tggatgcaga gaacagtggg ttcaaagacc cagaggtgaa tgggaaggat gtgggtgtgt tgagtggctg gtgtggtaag gcccaagccc 6720 aggagggtac agagctaaat aatgagacac actcaggcca agtagggcct cctgggctgg 6780 gtaaggattt gggattttat tctgaagtgc ggagggaagc tttggaggaa tttcccctcc 6840 tgactttttc ctgtcattca taatatacaa gaaaaagatc attagtcact tctatttatt 6900 cagataatga acaatctcta cttcttaagc tatataaacc ttgtcttagt gtgtgaaaca 6960 attctggagt gtctagtttt caatctccag atgagggaac tgaggctcaa aacaaagtga 7020 aagaaggcag aggcaggatt tggaaccagg cctgcccagc ccacggcaca tgctctgtag 7080 ttttctggga cagatgagtg taaatgcata tgggcctcct aggcacccgg catccttcat 7140 caggagette agtggatgga ctagggtgga gtccagtcct tcctggctct ttagaaacag 7200 gaacaaaaga ccccgaagag tggagggagg ttgggcatgt acaggtcagg gggtcagaat 7260 ctgtaggcac caaatgtcag ggccccctgg ctatgggaag ggctgtcagt ttttcacgct 7320 agtetgttet geteegeeta getgttgeee agaaateeea aagagggtge etteeeaget 7380 ctgttcacct ttgaaaatct gaattcatca tttgtgtgca cttgagagac ccagggtttg 7440 gtaaaaacaa aattetttat tgggtgtttt caggtcacag gaaaageete caetgtgtgg 7500 gacccacatc cttagcactg catgctggct gcttccaggc atctgcactg accctgtttc 7560 teetteettg etgtgaageg gteatgaggt tgeagtgeea gatgtgttge aggeeaggtg 7620 tatctcggct ggttgggcag gccttctgct taacatggga cctcacttag tgagggaaga 7680 gagcagteet ggeecaaggg gtgeagtgte tggggeagat getttagggg ttatggetet 7740 atcatcttct caacctctta atgccactca gggtcaccac acataaatcc ctgggtactc 7800 teccaettag etetgtgaca ggtttgtgte etagatgett getgaetetg tatacatgtt 7860 caatggggtt aataaacgtc ttcagctaag cattttggcc agcgatcagc agagtgttta 7920 tttgctgtgg gcccggtttc aactcccact ttggtggtga ctaatatatt ttgttcttgt 7980 ggagtgcttt tcacttgata agccccagac actttctgtg tcagtcctaa atgccatatc 8040 cagatgteet ecagetteea gateggeeae ttetgtggea ettteetetg cataaacaet 8100 tcagccctct cgcagagtgg agttccagga aaccggtttc cacttcaagg ctctgttgtt 8160 ttctgctggc tttcttcatt aagatatttt tattcactgg cccctcagag atgaatatca 8220 agtgcagtgt tttgggaact ttgtttttca aagcctggat aaaaccaaga aaatgtcaag 8280 cagtaggtga ttaagtacca agtggtcgca caggcaatgc ttttgacatt gacagctggg 8340 ctctggttaa ccttttaaag acagcagcga agataaatgc cttagagcaa cagaaactat 8400

tggtgatgga aagttgaatt tattcaccaa taaacttggt aagtgacatt ccctaagtga gcctgtgaat tatggaaatc cacgtatcag tggacatgat gaagcacctg ctatacgcag 8520 tgcacccggc cagattcatt cattcgacgg ttcctatcga gcaccctcta tgtgctggag 8580 atacggtgac tcaccagatg gtcgccctcc cttgtcatca gtgctggcct tgaagatgac 8640 agatggaaat gctggcctag gctgccctct tgtaggtcac ggccggtgct tactatgtga 8700 ccagtgctgt tctaaatacc gtatgtacgt gtattaactc actgcatgct cacagagatc 8760 cctacatgga gtaggtgcag ttattatctg tacttacaga gaagaaaaca gaagcacaga 8820 agagagcatt atttgtccaa gtcacatagc tggtgattgg aaccagatag cctggcttta 8880 gagtctgtgt ccttcactgc cactaccaac caatgtgaaa ggaaaataat caacttagga 8940 cacaaagttg cacgccctct gagagaggcg gggatagaat accatgggcc ttcccagcag 9000 ggagagatgg gcttagggga gaaacagagt aaggtgggaa ccctaccctt ttcccattct 9060 gacaggtgac atccccgctg gggggatgga ggaaatgttt ggctactgag gaggctactc 9120 tggccagaag tagacaaaag aagcaactgt ctcgcagcca ggagacttgg atgctagttt 9180 tgattgatcc ggacaagtcc agggccctgc ccagggcctc tgttttccca tctctaaaat 9240 aggtggcttg gacaacattc tgtttgacct caggagccca ggatttcagc agagaaggga 9300 ggagctggct ctctgtgcac tctgaacagg gtttcctgac cagaagaaga tgtttggctc 9360 tgagagatgt gggggcaggc attggacttc ccagaaggcc ttggcagctg tgaaaggatg 9420 tatgcgttcc actgtggtcc caccccgaat gctgacgttg gctgtgtctg cattcctttc 9480 tttgtaggca ggatggcagt gtctgtgtgt ctggagctca cactataagg tactttgtat 9540 gagagacaga gggagctaga gggagggaag agggagtagg gaggggaagg aagccgggag 9600 agagagaggt gatteeggga gggaetgaet tecatetget tteaaattet gagggattaa 9660 gtgctttcag atacttaaag tcagtgagtg tcaatggagt taaaaagctt ccaataataa 9720 ttgtagette atceatetge taaattgtet eeagagtegg etgeetatag tgttetggea 9780 tggcagaggc ccacatgacc gggcttgttt tccaggttaa gttccttaag aaattgtaaa 9840 ccaagcaaga aaaacaaaca gacaacaaca gaacacagat tgttgtggat catgcagcag 9900 gaaaagtagg acaccatttg agctgaccaa gcatatgtgt tctccgtgca gctctgtcga agetgtgtaa ggtgtgettg gtgetggete etgeeagatg etgttggeat ggetteatee 10020 acceagettg etgttgggta acttgeagag tgaagaagte tgttgtteae gteateacea 10080 caaccctgaa catccaagca gttcatgtca acaactagag tataattatc ttctttactt 10140

gtaaaactgt ggagcctgtg gattaaattc accaaaatga atcatattca agagaagtca 10200 tttcctaaag gagaattcag atgtggtccc cattcatggg tatatgtgtg ccagttatgt 10260 tgggggttgg tggagcccac tctaattgac atttgcaatc tgggttatat cacctctgag 10320 gtaggcaggt acctacatga ggtaggcagg gaatgatggc tttaacttag ttcattcaat 10380 aaatgaatat cagttatcta ttcctattgt ccaggatggt ggtgggcaga atgtctgaga 10440 agcccatgtt gtgtatggca ggttgtgact ttaccagaga tggcattttc tggttaaact 10500 tgggtgatag gatgtgtttt taacagaaag ggaaaaagaa tctgaactag tttccttggt 10560 aataataacc atttgggttg gggagctgat actggttagg aaaatgtgag gcccctttga 10620 catcatccat ttgctgctga gaaatcaaaa ttaaaacatc actcggtgtc agaatgttcc 10680 agaaggcagt tgagctgcta atgttttgaa gtgttcagag gtatgtgttt tatgaaaaaa 10740 agaggaaata caagacaaag gaaatgaaac gtttggcaac cattgagcat ttcttcaata 10800 tggtatttct tgtggctctg ggattttaaa aatccacttg aaagccagta ttgttgactt 10860 ttgctctgta ctatttttgt ggggactgat tatttttcac tttatattcc ttatttctaa 10920 ctaggcttaa tggtaatacc ctaagttgat ggccttctac taaatttaaa acaaaatata 10980 ggccgggtgc ggtggctcac tcctgtaatc ctagcacttt gggaggtcga ggcaggtgga 11040 tcacctgagg tcaggagttc aagaccagcc tggccaacgt ggtgaaaccc cgtctctact 11100 aaaaatacaa aaattagccg ggtgtggtgg caggtgcctg taatcccagc tactcaggag 11160 gctgaggcag gagaatcact tgaacctatg aggcggaggt tgcagtgagc caagatcacg 11220 ccatcgcact ccagcctggg tgacaagagt gaaactctgt ctcaaaacaa acaaacaaac 11280 aaaaataaca acaacaacaa aaaaaactgt tcccacccac aatcccatca gatttattgt 11340 gatactttca caaaacagga agagcttttt attgatttac aggtgcacag aaagtcttaa 11400 catctcatct gagtttgttt ggtcttaatg aaccatcgtt tagtttaatg aagaccaagc 11460 attttctctc tagggcaggt gggccctttg agttgaaagt catagttcct caaaacaagg 11520 cagtcgctga gaatgttgtg ctggcctgcc tcaagatgtc ctgagatgcc ctaatgagga 11580 aaaggcccta aaatatttca atcatgcaag tgtatagcct tcttataaaa aaaaaaacat 11640 tacgaataaa agteetaeee tacteetggt gteeteteee ttteeagaag taatttteat 11700 teteacaceg tgtgtettet caeaggtggt tttetttgca tttacattca egggegtatg 11760 cctatagaga acgtggagtg ctttgtgtat ttggagggca ggggatgtgg gcaagccata 11820 taaatgttat tatactctat atttctttct gcaacttaca tttttcaagt gacaggatgt 11880 cttaaggctc tttctatgtc agtacatgca gctccaccgt gttctttttc atcactggtc 11940

ggcttggctt ttagggatac caacccagta attctaacag aaatgatgga tgtggttctg 12000 tggagccaag tgaggggtgg agtgaggtgg caggacccaa cacaagttgg gagaaggtga 12060 atgatgtaac ccaaggacaa ataaagaagg tgcatgtcct gcctattttt cttcctagta 12120 aagcagtatc tecetatata gattaetget gagtetgagg tagacaggga atggtgttat 12180 attttatctt aaatcttaat tccataaata gttatagtat ctgaaaaagg ttgtagtgac 12240 ttttctgtgc taagagggat cctttaatgt agtgggctca gacaacgaag gttttttgtt 12300 ttgtttattt tttaagaaac aggggtctca cttgtcaccc aggctggagt acagtggtgt 12360 gatcataget cactgtagee tegaactetg aacteetggg etcaagtgat eeteetgeet 12420 cggcctcctg agtcattagg acagtaggcg tgcaccacca tgcctggcta tcaaacaatc 12480 aaggttgatt tetteeteat atettatgte etttgegagt tggeaagage taeteattgt 12540 ggttatttgt gggcctgagc tgatgcagct gccccatct tgtgctaatc atagtgccag 12600 aagcaaaaaa aaaaaaattg cacattgata aattaagcag tgatggctaa aagcctccta 12660 cccaaagcaa cacattetgt ttetgeteat gttteatgag ttaaageetg taaetteaaa 12720 ggggtaggga agtgtaatcc taccaggtgt ctaggagaag aacctgaact gtttgatgaa 12780 ctgaatactt ctaccactgt gttggttttc aaggaagggg tgggaaagtc tttgaaaact 12840 ctcctgtgac ccataaagtt atatcctaga agccaatcct ttctgtgttc ataaaatcac 12900 tggccttttc ctgtggccgc caaggttgca gagagcagag ctgtttggga actcacttca 12960 actgggccag gttccatatg acctgggtgc cagcaaagct ggccttggtt ttgcttatgc 13080 ttgtatttgt taccaaccta tatagcaagt atcacagtag aaaaacttac agaatggcct 13140 gactacacag ageteactgt tgaaaaacge tgggttgtaa etetaagata geatetgeta 13200 cattgctaaa gaatgtttta taacagggct tagatctgtt aggaatctta gctgctactg 13260 ttgcaacacc aatttatgga aagctgtgtt atttattttg aaatataaac atgaaaaaaa 13320 aaaagagcga ataatgattc ccaacaattg ggtgcctgaa gaaagagtga aatcatgagg 13380 ccagtgttga tgatgggaaa tgactttctt gaggtttctg ttctcaatct ggccccatca 13440 gttgggatgg agtctagtct tgtctgctca tgctgggagg aaggcgctca tagtcacaat 13500 ggagcaggga aacctctgct gggtgattct gcacagcatg aagctcctgc taaatggatc 13560 atgtttgcta gtgtttttta ggctgcagag aacaggggca cactgaggct atgttcatgg 13620 gggtttatta taaagataca caaaataagg gaagccgtgg ctggtggcct cagctgtggg 13680

cagecaaace cacaceteet gtgggttttt gggaeteage atetetetaa atgteteaaa 13740 ttcaaactcc ctgagagagg agctctaact gggtctccct gtcacctgcc attacagagg 13800 gctgcagggg agcagacacg tctgtgatca tgctggctgg agcccaagga agcccttgag 13860 agccacggca cccccctgtc tctctctgct catttctgct tccacacatt caccatactt 13920 gtgattcctt gttctgtgtc tgtctgtcct gcccagttgt aaactctgtg agggcaggga 13980 gctacttgac ctctgtgtgc ctcagtttcc tcatgtgtaa attggcggta acaatgaccc 14040 ctggcaccta gggttgttgc aaggattgag ataacagaaa ttagtaaatg attcgctcat 14100 tactgagtge cagecetgge etaggeattt tgtgeatatt aacteaetta ateettacag 14160 caacattttg aggtggaact cttaccttga ggcaatcacg gcacagaaag gctggctaac 14220 ttgctaacaa gtgatggtcc ttataatcag tgatcttata ataaagtccc atgaacagac 14280 ataaactgag agtgcccctg ttccccacag cctaaaatca ccagcaaaca tggtccattt 14340 agcaggaact tecetetaat tigeteatga gicagaatti gaacaetget gietetagag 14400 atcccagaca ccacagattt cacccttatg ttgtcctgcc tctcaccatg tgtataaagc 14460 cttaacatcc atgctgatgc cctagtacaa cacttggtgt tagctattat cagactaggc 14520 cetgetgggg ceettgeacg ttgcagggee ggacatgagg aagtgeteag tggatetetg 14580 tagaaggaat gaacagetge aaceteatgg agttgteeca ceaetetetg eecetgeeca 14640 cccccttgca gctatcccac gggtcacgct gatggtagag cactgtcatg tgcctcgcag 14700 ctggcagagg ctgctgggca aggtgtccag gtttgcttta gcagttcagg caggcatggc 14760 cgggccgagg aaagggagac catttgccat tatctttgag cctccctttg gcacgtggaa 14820 tttctcagat gcagagcttt aaagcagcag agtggcaggt gagttcttac ccttctttat 14880 aagagaaaaa ccagggaaag caaaacattc tgctttctag aagccaagtc atccagaagc 14940 cagettetge agetecaaag agggeettag cagttacaaa gaaacacaag ataacggtaa 15000 gagaacaaca aaaacatggt gtaatgccaa acatgcaaaa agtcagtgtg ggcgcaaatg 15060 catgcagaga aaagctgaaa ggaagtgctc caaaatgaga atagtggtta ttgcatgtgg 15120 agtgagcagg tattgtttta tacttacaga aaaagttatt aaaacataga aaggtacatg 15240 tggagaacat ctttataaaa tgttttttt tttttaatct tagcatctca gttataagaa 15300 atgcacatct ccgctcaagg tcccctggga cagtgcaagg aaagaaagaa gcctgcggtg 15360 aaagtgacac tgagtgagtg tgtatctgtg gtttctctgg ggccacccca ggattcaggg 15420 acagagteet ggttgetete caggaggtga gaeteettte taggteaate attteetgag 15480

gggtcctggt gacctcacga gatattaata taatatagtt cggttagtac ccatttctgt 15540 ttcccagctt atgaacactt cctgttgctc atcatttttg tttttgtctt gggatcattt 15600 tttttctacc tgaaaaactc tatttagtgt tcattttagt gcagatacgg tagcaacaaa 15660 gtctcagttt ttgtctggaa aaactttatt ttgcctttcc ttaaaagaaa atcaatttca 15720 tggaagtgta atttcataca ataacattca cagatttcaa gcatatgggt tgctgacttt 15780 tgacaagtcg tatgtatcta tatgtatatt catatatata catacacaca catatgtgac 15840 tgtatacaag ggagagagca agcatgcaat caagacacag aacatttcta tctccccaga 15900 aatttteett atteetettt geagteaatt teteeceeae teecatetge eecetgeete 15960 aggaaaccat tgatctgatt tctagatcag attttcagaa tcatatgcat gaaatctttt 16020 ttttttttt tttgagatgg agtctcactc tgtcacccag gctggagtgc aatggtacga 16080 tettggeteg etgeaacete egeeteeegg atteaaceaa tteteetgee teageeteee 16140 tagtagetgg gattacaggt gtgcaccacg atgccctgct aatttttgta tttttcgtgg 16200 agacagggtt tcacaatgtt ggccaggctg gtctcgaact cctggcctca agtgatccac 16260 ctgccttggc ctcccaaagt gctaggatta caagcgtgag ccactgcacc cagccctaag 16320 tactettttg agtetggett eteteaetea gtgtagtate tgtgaeaete atteatgatg 16380 gattettgtt teattggeat ttattgttga attgtgttet actgtatgaa tatgetatae 16440 tttgtcaatc cattcaccag cagttgtcct ctgtgtgagc tacaagttat tctattatag 16500 cagaaccect gattetttte aaaaggeggg tttetagaag gggaagttae taaatagaaa 16620 gttttcagag tctgttgaca catattgtgt caaaggactt tccagagact tccacagatt 16680 tacatttcca ccagtggtat aggagagtcc tgactcacca aacatcaaca gcatttttgt 16740 atcttactct ctatctttgc aaggatgcaa agctgcaaaa ttgtatgcag cagtgaagag 16800 aattttacat tgagtataaa ccagtaggtc cagtgtgtat tttcttcctg agtttgcaga 16860 attttcagtg acctcacgtc tttaacctct gtctcactga gttgccgatg aaactgatct 16920 gaaaagccaa ttaagatcat tcctggccag gcacggtggc tcacacctgt aatcccagca 16980 ctttgggagg ccgaggtggg tggatcacga ggtcaggaga tcaagaccat cctggctaac 17040 acggtgaaac cgcgtcccta ctaaaaatac aaaaaattag ctgggcatgg tggcaggtgc 17100 ctgtagtccc agctacttgg gaggctgagg caggagaatg gcgtgaaccc gggaggcgga 17160 gcttgcagtg ggccaagatt gtgccactgc actcccgcct gggtgacaga gcgagactcc 17220

gtctcaacaa caacaacaac aacaacaaag atcattcctg gcatcagtat ttcaaatgga 17280 agggcagcag gcaggaactc tgatgtctca acaccctagc ttttagtgat tgccctggag 17340 tggcactgtc cacttgagta gcccctggcc gcatgtggct cttgagcact ggaaatgtgg 17400 ttgatccaaa ctgagatgtg cgattaaaac acatgccagg tttccaagcc atagtatgaa 17460 gaaaaagaat gtaaactatc tcattaataa attttttgtt gatgggctgg gtgcagtggc 17520 tcacacctgt aatcccagca ctttgggagg ctgaggtggg aggatcactt gaggccagga 17580 gttcaagacc agcctgggca atatgatgaa accctgtctc tactaaaaat acaaaaagta 17640 gccaggcatg ggggtgtgca cetgtaatce cagetaetta ggaggeggag gcaggagaat 17700 tgcttgaacc tgggaggcgg aggctgcagt gagccgagat tgcgccaccg cactccagcc 17760 tgggcgacag agtgagtgag acttcatctc aaaaaataat aataaataaa ttttgtatgg 17820 atgacatact gaaatatttt gagtgtatta gaattaaaat atatcattga aattaatttc 17880 acctgtccat ttttactttt attagtgtgg ctattagaaa gttttaaatt actaggaaag 17940 ctgtgtcata tttcaattca acagagctgc tctatggtct cctttttccc tttgaagatc 18000 cgccatcctg caatccctgc ttccttttca ccagagcagc ttccctgaat cttctcctgg 18060 aggetetgea gaeettttet ttagtttgga agateaeatt geaggagggg aettgggeae 18120 tggtttctgt gaggagcccg gagtggtgaa ttgcccctgg gattccctta ccctggaaac 18180 taaccctctc tgagggcaga aagctagaaa gaagagcggt tgagaggaaa tgcctgtgca 18240 acceceaget ecettegggg eteceteact geecacagge tetacececa cetgeetttg 18300 cctcaggaga tggcttttgg tggtggactc accetectec gateteetet getteatttt 18360 tccacttggt gatccatctt ttgttctgcg gtgtgtcctg ttttctggct gcctccatta 18420 gettggtttt tteetttggg tateeetgga getgtettae eaggatetee aactteagte 18480 eccattggte tgeaceactg geetgggaaa geteeaceca ggagageaga eccageteee 18540 agatacctgg ccccagccca atctccgtcc tctctttgcc tggaagagag gaccagaccg 18600 tottcatcaa ctggacccac cotttaccaa gcaaagaaag gaaaggattg ccccccaggg 18660 ccagcagatc tctggctgtc tggtgtttct ggtaataagt gcccatgaac ttcgaattga 18720 tetecagtet eccatggtat ggttttggte taccettaga ttetgtttae caaggeagag 18780 ttcagtttct ctgctttccc ttccaacatc cataccttgt taagttcttg ctgaattgag 18840 ctaactctgc acacctgatt aaatcttcag ccagggctct ggacattata aagcagcctc 18900 cttgccagat ggctgtcata taatatattg ctttatttag gtgattgtaa gtcaggagac 18960 tttccttcgg tttctgcctt tgatggcaag aggtggagat tgtggcggcg attacagaga 19020

acgtctggga agacaagttg ctgtttttat gggaatcgca ggcttggaag agacagaagc 19080 agtgagtaaa acgggcccct cgtggtaggc gggcaaaggt cgggaaagga gggatgaagg 19140 aagctgtgca acaccccttc ccagctttct aaagaatgga gcatggcatt gcaaaatgct 19200 gaatcacaaa gtgagaagtg acttctttcc agttttctct cagccttgtg atgatcttaa 19260 agagaaagtc tcaattctgt gctactgtgt ctttaacatc tctcaaatgc ttccgagaga 19320 aaacaggccc caaccctgga gcctttccag gcagcaggac tagctggaat acagtaacat 19380 tgtggtattt ctggtgaatt aatttttgtg ttactttcta tgtattgcaa aggatatttt 19440 ttttctgttt ctaatggtga cattacattc ctttaaaatt attagagttt tcaaaactca 19500 attgaaagca aaaggttaag caaataaagg acaggtgtga ctcaattatg gcaagaacaa 19560 caaaaaagtg actatggtgg ggacgttgaa catttagaaa acactgtcct aaaagaagaa 19620 ggtacagaga gtagtctgat acctgggagt actagatttt aaaattattc tcttgccaat 19680 tttattcatt cattcaccat gtgccacaat aatttttta agtctttctt tgattttgca 19740 gattccagaa ataaattgga aattgaagat ttaaacaatg ttgttttaaa atattctaac 19800 ttcaaagaat gatgccagaa acttaaaaag gtattattaa ctgctaattt aaatttaata 19860 ttgtcagctg gtatgcttta aatgaaccga ttttctaaag ctaaggatcc taaagtgggt 19920 catagaattg actgccatgg aaaatagccg ggtgtggtgg ctcacacctg taatccaagc 19980 actttgggag gccgaggtgg gcagatcact tgaggtcagg agttcaagac cagcttggcc 20040 aacgtggtga aaccctgtct ctactaaaaa tacaaaaatt agctgggcat ggtggcaccc 20100 gcctgtagtt ctagctactc gggtggctga tgcaggagaa ttgcttgagc tcaggaggca 20160 gatgttgcag tgagccgaga ttgtgccact gcactccagc ctgagccaca cagtgggact 20220 ctgtcaaaaa aaaaaaaaaa agaaaaggct ggattagtat ttaataactt ttattggaac 20280 aataactaat attttcatac etttaaattt ttttggtgag gatetettge eettetgttg 20340 ctgataattt taaattttac tctttcctgc tctatcattt ggattctaaa aagaaagcta 20400 ttgtgtgggg tctggcattt gataggttaa aaaaagaaaa catagaagca tgtcaaagag 20460 caggagactc atgtgccact tggtggaaaa aaaattgaga accactggac ctgaatgtta 20520 acagatgtgg cttgtgaaac atattaatga tgtggatagt gttaaaagat ctatgagctt 20580 ttttttgaac tacaaaaaaa ccttttttt actctctctc tgaaatgcat gagttttcct 20640 gcctagacaa acgacaaagt ggccaattcc aggcctttcc acttccaaga tcattttaca 20700 cacgcaagta ttcctggaca agaagaggct gaaggatctt ctgtgggatt tttttaaaaa 20760

attattatti titgetgita tiggitacaag gaaggtagtg agigeaatti tiggiataact 20820 cagatgaacc caaatgitti tidaatgeeca aataaatag eetiggiteee tigticetaee 20880 cagacaagaa acteageact tigtaeeaggi titeeaagggi titeeagaga ataeeteete 20940 tiggigaateta ateeeaggaa eteetigtigeeg geteteeete tieeeteege eeetiteete eeaggigetee 21000 teeetitigee eeacticatig eeacatiggige tattigetitit eeeteetite eeaggigetee 21060 tiggigaataaa agaetitiget gaaggieaag gacaeggiggig aagaigtitat ageacaacee 21120 aaaatiggigea acagtigeetig eeeteetee eegeteetee tiggietaeee 21180 aggaagaette atgetigetig eeeteetee tiggietaeee 21180 aagaagaette atgetigetig eeeteetee tiggietaeee 21180 caaaceeeae aggietiteet tieeteetee tiggietiteetee tiggietiteetee tiggietiteetee tiggietiteetee eeeteetee eeeteetee 21300 aaceteeaag eeetigtaac ettattatig aaaataaaca eeetiteeate tietateeeag 21360 tataaggatea aageaeetee tiggietaeete tiggietaeea eeetigeetee aggietitee tiggietaeee eeetigeeegaa eeetigeeegaaeee 21480 aaaaaaagagt tiggietaeete tiggietaeee tietaatgea tigaagaataa aagittitti agaagacaggi 21540 ceetigeeteig teaceeagge tiggigigiage tiggigigiaee eeetigeeegaaeee 21580

```
<212> DNA
<213> Homo sapiens

<220>
<221> exon:exon junction
<222> (2769)...(2770)
<223> exon 7:exon 8b

<220>
<221> exon:exon junction
<222> (2903)...(2904)
<223> exon 8b:exon 9

<400> 11
```

<210> 11 <211> 4610

ccctcgcgct actgcggag cagcgtctc ccgggccacg gcgcttcccg gccccggcgt 60 ccccggacca tggcgctctc cgggctcttc tctagctctc agcggctgcg aagtctgtaa 120 acctggtggc caagtgattg taagtcagga gactttcctt cggtttctgc ctttgatggc 180 aagaggtgga gattgtggcg gcgattacag aaaacatctg ggaagacaag ttgctgttt 240 tatgggaatc gcaggcttgg aagagacaga agcaattcca gaaataaatt ggaaattgaa 300 gatttaaaca atgttgttt aaaatattct aacttcaaag aatgatgcca gaaacttaaa 360 aaggggctgc gcagagtagc aggggccctg gagggcgcgg cctgaatcct gattgcctt 420

ctgctgagag	gacacacgca	gctgaagatg	aatttgggaa	aagtagccgc	ttgctacttt	480
aactatggaa	gagcagggcc	acagtgagat	ggaaataatc	ccatcagagt	ctcaccccca	540
cattcaatta	ctgaaaagca	atcgggaact	tctggtcact	cacatccgca	atactcagtg	600
tctggtggac	aacttgctga	agaatgacta	cttctcggcc	gaagatgcgg	agattgtgtg	660
tgcctgcccc	acccagcctg	acaaggtccg	caaaattctg	gacctggtac	agagcaaggg	720
cgaggaggtg	tccgagttct	tcctctactt	gctccagcaa	ctcgcagatg	cctacgtgga	780
cctcaggcct	tggctgctgg	agatcggctt	ctccccttcc	ctgctcactc	agagcaaagt	840
cgtggtcaac	actgacccag	tgagcaggta	tacccagcag	ctgcgacacc	atctgggccg	900
tgactccagg	ttcgtgctgt	gctatgccca	gaaggaggag	ctgctgctgg	aggagatcta	960
catggacacc	atcatggagc	tggttggctt	cagcaatgag	agcctgggca	gcctgaacag	1020
cctggcctgc	ctcctggacc	acaccaccgg	catcctcaat	gagcagggtg	agaccatctt	1080
catcctgggt	gatgctgggg	tgggcaagtc	catgctgcta	cagcggctgc	agagcctctg	1140
ggccacgggc	cggctagacg	caggggtcaa	attcttcttc	cactttcgct	gccgcatgtt	1200
cagctgcttc	aaggaaagtg	acaggctgtg	tctgcaggac	ctgctcttca	agcactactg	1260
ctacccagag	cgggaccccg	aggaggtgtt	tgccttcctg	ctgcgcttcc	cccacgtggc	1320
cctcttcacc	tttgatggcc	tggacgagct	gcactcggac	ttggacctga	gccgcgtgcc	1380
tgacagctcc	tgcccctggg	agcctgccca	ccccctggtc	ttgctggcca	acctgctcag	1440
tgggaagctg	ctcaaggggg	ctagcaagct	gctcacagcc	cgcacaggca	tcgaggtccc	1500
gcgccagttc	ctgcggaaga	aggtgcttct	ccggggcttc	tcccccagcc	acctgcgcgc	1560
ctatgccagg	aggatgttcc	ccgagcgggc	cctgcaggac	cgcctgctga	gccagctgga	1620
ggccaacccc	aacctctgca	gcctgtgctc	tgtgcccctc	ttctgctgga	tcatcttccg	1680
gtgcttccag	cacttccgtg	ctgcctttga	aggctcacca	cagctgcccg	actgcacgat	1740
gaccctgaca	gatgtcttcc	tcctggtcac	tgaggtccat	ctgaacagga	tgcagcccag	1800
cagcctggtg	cagcggaaca	cacgcagccc	agtggagacc	ctccacgccg	gccgggacac	1860
tctgtgctcg	ctggggcagg	tggcccaccg	gggcatggag	aagagcctct	ttgtcttcac	1920
ccaggaggag	gtgcaggcct	ccgggctgca	ggagagagac	atgcagctgg	gcttcctgcg	1980
ggctttgccg	gagctgggcc	ccgggggtga	ccagcagtcc	tatgagtttt	tccacctcac	2040
cctccaggcc	ttctttacag	ccttcttcct	cgtgctggac	gacagggtgg	gcactcagga	2100
gctgctcagg	ttcttccagg	agtggatgcc	ccctgcgggg	gcagcgacca	cgtcctgcta	2160
tcctcccttc	ctcccgttcc	agtgcctgca	gggcagtggt	ccggcgcggg	aagacctctt	2220

caagaacaag	gatcacttcc	agttcaccaa	cctcttcctg	tgcgggctgt	tgtccaaagc	2280
caaacagaaa	ctcctgcggc	atctggtgcc	cgcggcagcc	ctgaggagaa	agcgcaaggc	2340
cctgtgggca	cacctgtttt	ccagcctgcg	gggctacctg	aagagcctgc	cccgcgttca	2400
ggtcgaaagc	ttcaaccagg	tgcaggccat	gcccacgttc	atctggatgc	tgcgctgcat	2460
ctacgagaca	cagagccaga	aggtggggca	gctggcggcc	aggggcatct	gcgccaacta	2520
cctcaagctg	acctactgca	acgcctgctc	ggccgactgc	agcgccctct	ccttcgtcct	2580
gcatcacttc	cccaagcggc	tggccctaga	cctagacaac	aacaatctca	acgactacgg	2640
cgtgcgggag	ctgcagccct	gcttcagccg	cctcactgtt	ctcagactca	gcgtaaacca	2700
gatcactgac	ggtggggtaa	aggtgctaag	cgaagagctg	accaaataca	aaattgtgac	2760
ctatttggga	ctttggaaat	cagtagacac	catatgcttc	aaaaaacagg	ggctattaaa	2820
atgacatcag	gagccagaaa	gtctcatggc	tgtgctttct	cttgaagttt	atacaacaac	2880
cagatcaccg	atgtcggagc	cagactggga	aaaaacaaaa	taacaagtga	aggagggaag	2940
tatctcgccc	tggctgtgaa	gaacagcaaa	tcaatctctg	aggttgggat	gtggggcaat	3000
caagttgggg	atgaaggagc	aaaagccttc	gcagaggccc	tgcggaacca	ccccagcttg	3060
accaccctga	gtcttgcgtc	caacggcatc	tccacagaag	gaggaaagag	ccttgcgagg	3120
gccctgcagc	agaacacgtc	tctagaaata	ctgtggctga	cccaaaatga	actcaacgat	3180
gaagtggcag	agagtttggc	agaaatgttg	aaagtcaacc	agacgttaaa	gcatttatgg	3240
cttatccaga	atcagatcac	agctaagggg	actgcccagc	tggcagatgc	gttacagagc	3300
aacactggca	taacagagat	ttgaacttgt	ttggaacttg	tcataaaatc	gatcagtttg	3360
gtgaattgca	accaacaata	tttaaaaaga	aaacagaaca	gaacaaaata	tcaggatgca	3420
atgtgcatgc	ctaaatggaa	acctgataaa	accagaggag	gccaaagtct	atgaagatga	3480
gaagcggatt	atctgtttct	gagaggatgc	tttcctgttc	atggggtttt	tgccctggag	3540
cctcagcagc	aaatgccact	ctgggcagtc	ttttgtgtca	gtgtcttaaa	ggggcctgcg	3600
caggcgggac	tatcaggagt	ccactgcctc	catgatgcaa	gccagcttcc	tgtgcagaag	3660
gtctggtcgg	caaactccct	aagtacccgc	tacaattctg	cagaaaaaga	atgtgtcttg	3720
cgagctgttg	tagttacagt	aaatacactg	tgaagagact	ttattgccta	ttataattat	3780
ttttatctga	agctagagga	ataaagctgt	gagcaaacag	aggaggccag	cctcacctca	3840
ttccaacacc	tgccataggg	accaacggga	gcgagttggt	caccgctctt	ttcattgaag	3900
agttgaggat	gtggcacaaa	gttggtgcca	agcttcttga	ataaaacgtg	tttgatggat	3960

tagtattata cetgaaatat tttetteett eteageaett teecatgtat tgataetggt 4020 cccacttcac agctggagac accggagtat gtgcagtgtg ggatttgact cctccaaggt 4080 tttgtggaaa gttaatgtca aggaaaggat gcaccacggg cttttaattt taatcctgga 4140 gtctcactgt ctgctggcaa agatagagaa tgccctcagc tcttagctgg tctaagaatg 4200 acgatgcctt caaaatgctg cttccactca gggcttctcc tctgctaggc taccctcctc 4260 tagaaggctg agtaccatgg gctacagtgt ctggccttgg gaagaagtga ttctgtccct 4320 ccaaagaaat agggcatggc ttgcccctgt ggccctggca tccaaatggc tgcttttgtc 4380 tcccttacct cgtgaagagg ggaagtctct tcctgcctcc caagcagctg aagggtgact 4440 aaacgggege caagactcag gggatcgget gggaactggg ccagcagage atgttggaca 4500 cccccacca tggtgggctt gtggtggctg ctccatgagg gtgggggtga tactactaga 4560 tcacttgtcc tcttgccagc tcatttgtta ataaaatact gaaaacactc 4610 <210> 12 <211> 260 <212> DNA <213> Homo sapiens <220> <221> misc feature <222> 38 <223> n = A,T,C or G<220> <221> CDS <222> (7)...(161) <400> 12 ctcatt gtc tcc cgc cca cat tca att act gaa aag cna tcg gga act 48 Val Ser Arg Pro His Ser Ile Thr Glu Lys Xaa Ser Gly Thr

tct ggt cac tca cat ccg caa tac tca gtg tct ggt gga caa ctt gct 96 Ser Gly His Ser His Pro Gln Tyr Ser Val Ser Gly Gly Gln Leu Ala 15 20 25 30

gaa gaa tga cta ctt ctc ggc gga aga tgc gga gat tgt gtg tgc ctg 144 Glu Glu Leu Leu Gly Gly Arg Cys Gly Asp Cys Val Cys Leu 35 40 45

ccc cac cca gcc tga ca ggtgccccgg ggacagggac gggcatgggc 191 Pro His Pro Ala

ttgtgtggac accgggagct agaagagcct ctcctgctgg tctgagtgaa gagctgggag 251 ttacgtccg 260

```
<400> 13
000
<210> 14
<211> 248
<212> DNA
<213> Homo sapiens
<220>
<221> misc_feature
<222> 8
<223> n = A,T,C or G
<220>
<221> exon:exon junction
<222> (54)...(55)
<223> exon 1b:exon 2
<400> 14
cagggtantg gacagtgcaa ggaaagaaag aagctgcggt gaaagtgaca ctgagtgatt 60
gtaagtcagg agactttcct tcggtttctg cctttgatgg caagaggtgg agattgtggc 120
ggcgattaca gaaaacatct gggaagacaa gttgctgttt ttatgggaat cgcaggcttg 180
gaagagacag aagcaattcc agaaataaat tggaaattga agatttaaac aatgttgttt 240
taaaatat
<210> 15
<211> 34001
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> (425)...(524)
<223> unknown
<220>
<221> intron:exon junction
<222> (10779)...(10780)
<223> intron 1:exon 2
<220>
<221> intron:exon junction
<222> (9546)...(9547)
<223> intron 7b:exon 8b
<220>
<221> exon
<222> (10878)...(10961)
<223> exon 8
<220>
<221> intron:exon junction
<222> (21846)...(21847)
<223> intron 10:exon 11
<220>
<221> exon:intron junction
<222> (21930)...(21931)
```

```
<223> exon 11:intron 11
<220>
<221> intron
<222> (21931)...(24748)
<223> intron 11
<220>
<221> exon:intron junction
<222> (29424)...(29425)
<223> exon 14:intron 14
<220>
<221> intron
<222> (29425)...(32217)
<223> intron 14
<2205
<221> intron:exon junction
<222> (32217)...(32218)
<223> intron 14:exon 15
<220>
<221> exon
<222> (32218)...(33394)
<223> exon 15
<400> 15
gacttcatgt ctaaaacacc aaaagcaatg gcaacaaaag ccaaaattga caaatgggat 60
ctaattaaac taaagagctt ctcacagcaa aagaaactac catcagagtg aacaggcaac 120
ctacagaatg gggggaaaaa atttgcaatc tactcatctg acaaagggct aatatccaga 180
atctacaagg aactgaaaca aatttacagg aaaaaaacaa acaaccccat caaaaagtgg 240
gcgaaggata tgaacagaca cttctcaaaa gaagatattt atgcagccaa cagtcacatg 300
aaaaagtgct catcaccact ggccatcaga gaaatgcaaa tcaaaaccac aatgagatac 360
catctcacac tagttagaat ggcaatcatt aaaaagtcag gaaacaacta ggtgctggat 420
agcettgaae tettgtgete atgtgateet eetgeettag eeteeceaat agetgggaet 600
acaggtgcgc caccatgcct ggctaatttt ttttattttt gtagagatgg gtgtctcact 660
atgttgcaca ggttggtctc aaactactgg ccttacttca agctatctac ccatctcagc 720
ctcccaaagc gctgggatta cagtcatgag ccaacttgcc tggccagata aaggtcttaa 780
gcatggttcc ttcctgctct aggtagagaa accccacaac cagtgggagg tggggtgagc 840
tetttetgta gettttgett tgetgatgat gteattgate tetteagggg etgegeagag 900
tagcaggggc cctggagggc gcggcctgaa tcctgattgc ccttctgctg agaggacaca 960
cgcagctgaa gatgaatttg ggaaaagtag ccgcttgcta ctttaactat ggaagagcag 1020
ggccacagtg agatggaaat aatcccatca gagtctcacc cccacattca attactgaaa 1080
agcaatcggg aacttctggt cactcacatc cgcaatactc agtgtctggt ggacaacttg 1140
ctgaagaatg actacttctc ggccgaagat gcggagattg tgtgtgcctg ccccacccag 1200
cctgacaagg tgccccgggg acagggacgg gcatggcatt gtgtggaccc cgqqaqctaq 1260
aagaggcctc tccctgctga tctgagtgaa gagcgtggga gtttagtcca gcgggcaggg 1320
ctgcattttg gggtactaat agcacacaaa tgcctgggtt agcaggttgc acagtcaggt 1380
attttacttc tgtgtttgtg tctggagcaa accctgacat ctcagttctc attgctgtgt 1440
gtattggttc ccagacactt catttttaga tcccctttaa attaggaggg aaaaagaaca 1500
taagcataag agcatcccca gcagcgatgt tcattcagtg cctctgaagg ctggagggct 1560
gcttgttgct gggtgagact cggaggggaa ccgactcagg gtcaggaatg atgacatccc 1620
acggtgggtc cacagtgaag aatctteece geteeactgt gggaegeett aacageeett 1680
acttccactt acgctttgcg ttatctcctg aaaaataaaa tggagaccac aaattccttc 1740
ttggttagag gaatgacaca actcatttat gacatgaccc cgctgggact cagaagagac 1800
caggacggtt tctgggggaa gcagtagcac actcgtgtgc tttgttctct tctcttgatt 1860
```

```
tgttttccca catttttaac aagaaaaaaa gccgttttta atatatggcc tatcgccctc 1920
ctactgtgtg gcccaggtgc ctacctcatt atgcccaagg ggtggttctc acctctccac 1980
teteatteet geacageagt tgtgteaggt taagagggae aaggagaagg etgggeaceg 2040
tggctcacgc ctgtaatccc agcactttgg gaggccgagg caggcagatc acctaaggtc 2100
aggagtttga gaccagcctg gccaacatgg ggaaaacccg tctctaataa aaacacaaaa 2160
attagtcggg catggtggtg ggtgcctgta atcccagcca cttgggaggc tgaggaaaga 2220
gaatteettg aacctgggag gtggaggttg cagtgageca agattgtgee attgeactee 2280
agccctccag cctgggtgac agagcaagac tctgtctcaa aaaagaaaaa aaaaaaaaag 2340
aggtagagaa gtccatggct atttgtctgt cctttttatt tttaggctca tggaagcctc 2400
ctggtttctt agagctgagt ggttttattt cttgctcagg aggtcatttc acagattttc 2460
gggctccaat atgttgactg tcacagcagc tggggggatg gcatagctac cggctgtact 2520
aagaactcag agccctgccc tgagcctgcc tgagggtcct tatggtagga ggatgcccct 2580
catgccagcc cgtgccctca tgcttgtgtc acctccaggt ccgcaaaatt ctggacctgg 2640
tacagagcaa gggcgaggag gtgtccgagt tcttcctcta cttgctccag caactcgcag 2700
atgectaegt ggaceteagg cettggetge tggagategg etteteecet tecetgetea 2760
ctcagagcaa agtcgtggtc aacactgacc caggtaggag tcagccccag caagaccgca 2820
ggcaccagtg caagcagggc cctggggggt ttggtaatgg ctgggccagc cctgagtgcc 2880
acctcaggaa gcaggcccag gtgctatttt gattttagaa aggaacagct gaatcctgtc 2940
teceaagtge ageceaggtg getgegattg aactgeecae acetegatgg tetggtttat 3000
agaggggcct ttggaagtat gggaatggcc tgtgttctga ccccttgctt tcttcctatt 3060
ctgacatatg tagacatttt aatggttgca caaattcaag gttgtatttt tttttctttt 3120
aaaaaaatct ttagctggac atggtagcac acacctgtag ttccagctac tcaggaggct 3180
gaggcaagag gactgcttga gccccagagt ctaaggctgc agcgagctat gattgtgccc 3240
ctacactcca gcctgggtga cagagtgaga ccctgtctct aaaaaaggaa agaaaaaaat 3300
taaaaagcct tgccaggttt gattctaggc aaagtattct gtcaccgttg agtgccagtc 3360
cttatttcca aactaatgga agaccccatc agttaactga ttagttcaat aagtattttt 3420
tgctgtatcc accacatgcc aagaccctac actgtgctgg atgtcaggga gacagtggtg 3480
agcagacaca gacagggttc ctgccctcag ggagcttcaa gtcagctgga agagaccacc 3540
agtcagcaat ctcaaaaatg tgtcaggaca gcggcagtcc aaggcatgtg agaacatatc 3600
attagggcca ggatctgctc tggggcagga gtcttctttc cctgcttttg aactctccac 3660
tttgagacag ctgttggtaa cataccagca ccaaggacct aagtcctgcc ttttaaagaa 3720
tccaatatgt tgttggaaac agaagcacaa gacaggtgtg tgcttagggg aaacaaggcc 3780
agccggcaga gtgtcagtgc taggctccag cttccacagc ccctgcaggt gcctgccagc 3840
cactgctage ttetgaetet gtetgeteet teetgtetee cettgtttee tteececatg 3900
aaaaaaaaag aaagtattcc catgaggaat cattctttcg aaagacttct ctgttggttc 3960
cgttagccag ctactttact agcttttaca gtgtaattca ctctacaagc agtctcacac 4020
aaaagactac atattgtatg attctgttta tatgaaatgt ccagaaaagg taaatctata 4080
gacaaagcaa atcagtagtt gcctacggcc cagggattgg ctacaaatag gctccagaaa 4140
actctgggaa gatggtagag atgttctaga cctggactgt ggtgaggttt gcacaacttt 4200
gtaaacttac taaaaattac tgacaaatat ataacactcc ctaacacttt gggaggccga 4260
ggtgggcaga tcgcttgaac ccaggaattt gagaccagcc tgggcaacat ggcgagaccc 4320
cgtctctaca aaaaaacaca aaaattagtt gggcttggtg gcatatgcct gtgtcccagc 4380
tacttgggag gctgaggtgg gaggattgct tgagcctggg agtttgagac tgcatgattg 4440
ggtcactgca ccctagcctg agtgacagag caggacccta tctctaacaa caaaaaagca 4500
agtgtttagc tgcagttcag tgatgacact gtgcggagga ataagggtgg cctgtctcag 4620
acactgatcc cagctgaagt ttgtcacctt ctttctggca aatctgaggt caagcagaga 4680
gatcaaagcc tggggccctc agggtcagga atgctggctc tgtgacgctc cccaggtcct 4740
gcatctgagg agtggctgcg ctggcctcag ggcccaggtt gtgaattttg tttatgcact 4800
cgcctctcct ctttgagacc tccctgtttg atgctgtttc tgcctctctc ctcaccctgc 4860
tgctgtgccc tgccacccc tccctccagt gagcaggtat acccagcagc tgcgacacca 4920
tetgggeegt gaetecaagt tegtgetgtg etatgeecag aaggaggage tgetgetgga 4980
ggagatetae atggaeacea teatggaget ggttggette ageaatgaga geetgggeag 5040
cctgaacagc ctggcctgcc tcctggacca caccaccggc atcctcaatg agcagggtga 5100
gaccatette ateetgggtg atgetggggt gggeaagtee atgetgetae ageggetgea 5160
gageetetgg gecaegggee ggetagaege aggggteaaa ttettettee aetttegetg 5220
ccgcatgttc agctgcttca aggaaagtga caggctgtgt ctgcaggacc tgctcttcaa 5280
gcactactgc tacccagagc gggaccccga ggaggtgttt gccttcctgc tgcgcttccc 5340
ccacgtggcc ctcttcacct tcgatggcct ggacgagctg cactcggact tggacctgag 5400
```

```
ccgcgtgcct gacagctcct gcccctggga gcctgcccac cccctggtct tgctggccaa 5460
cctgctcagt gggaagctgc tcaagggggc tagcaagctg ctcacagccc gcacaggcat 5520
cgaggtcccg cgccagttcc tgcggaagaa ggtgcttctc cggggcttct cccccagcca 5580
cctgcgcgcc tatgccagga ggatgttccc cgagcgggcc ctgcaggacc gcctgctgag 5640
ccagctggag gccaacccca acctetgcag cctgtgctct gtgcccctct tctgctggat 5700
catcttccgg tgcttccagc acttccgtgc tgcctttgaa ggctcaccac agctgcccga 5760
ctgcacgatg accetgacag atgtcttcct cetggtcact gaggtccate tgaacaggat 5820
gcagcccagc agcctggtgc agcggaacac acgcagccca gtggagaccc tccacgccgg 5880
ccgggacact ctgtgctcgc tggggcaggt ggcccaccgg ggcatggaga agagcctctt 5940
tgtcttcacc caggaggagg tgcaggctcc gggctgcagg agagagacat gcagctgggc 6000
ttcctgcggg ctttgcggag ctgggccccg ggggtgacca gcagtcctat gagtttttcc 6060
acctcaccct ccaggccttc tttacagcct tcttcctcgt gctggacgac agggtgggca 6120
ctcaggagct gctcaggttc ttccaggagt ggatgccccc tgcgggggca gcgaccacgt 6180
cctgctatcc tcccttcctc ccgttccagt gcctgcaggg cagtggtccg gcgcgggaag 6240
acctetteaa gaacaaggat caetteeagt teaceaacet etteetgtge gggetgttgt 6300
ccaaagccaa acagaaactc ctgcggcatc tggtgcccgc ggcagccctg aggagaaagc 6360
gcaaggccct gtgggcacac ctgttttcca gcctgcgggg ctacctgaag agcctgcccc 6420
gcgttcaggt cgaaagcttc aaccaggtgc aggccatgcc cacgttcatc tggatgctgc 6480
gctgcatcta cgagacacag agccagaagg tggggcagct ggcggccagg ggcatctgcg 6540
ccaactacet caagetgace tactgcaacg cetgetegge egactgcage gecetetect 6600
tegteetgea teaetteece aageggetgg ceetagaeet agacaacaac aateteaacg 6660
actacggcgt gcgggagctg cagccctgct tcagccgcct cactgttctc aggtgaggct 6720
gccaggcaag gggagcaaca ggtgggccgg gcgggccagg ctcggagggc atcgggaatg 6780
gcatcatgga ccaggatccc ccaggactca tgaccatggc ccttggaatg tccagacctt 6840
ttctttctta gcagggcaga ggtcaaggtg caaagcttcg aggcaggtgg acctggatca 6900
gccacagctg gqtgcccttg aacaaagtgc ttaactctca gagcctccac gccctcatct 6960
ggaaaaagaa gatgctcata atcctatcaa ttatggccac agggaccaat gttagttgag 7020
aatgggtgaa gtgcattaca aatattacct aatggaatgc tctttacaac cctgtaactt 7080
aggtactgtt attgtctcta ttttggcaga taaggaagta gaggcacaga gaagttaata 7140
gcttgcttta ggtcacacag ctcagacata gcagtgccag aatgcataaa gaaccttcct 7200
tttaagatta atgtaaggct ccgagatagc cctcaaaaag tttctggaat atgggagctt 7260
ttattactgc agagaaagca gaccttgtgc cagttggcac tggtgacttt ctgtgatcaa 7320
cgctagcagc ccttcacact gctagagacc tcagttaaaa tgctgactcg tggttgtttt 7380
cctgttccat agtttacggg aaacagagcc cagtctgttt tcttctatta gcatttccta 7440
tgtaaaataa accttgtaaa tctctacagg gggttaaatt tgccattact tgactcatgc 7500
atttctaaaa agcagtaggg atttggaact gactcccagt gcctgtcaca ccagtgtcag 7560
agtgtaaata attgcatggg gacatggggt gcagggggtc gaaggctgcc ctagcctggg 7620
aattggaaaa cctggagtct gttctctgta ctctcagcca gtgactctcc ctctgtagcc 7680
ccaggcagtc tcacactcag tgccacctc tgtccatctt tttttttct cccccaaatg 7740
gagteceget etgttgeeca ggetggagtg eagtggegtg ateteagete aetgeaacet 7800
cogectectg ggttcaagcg attetettge eccagectee tgagtagetg ggattacagg 7860
cacacgccac catgtccggc taagtttttt gtatttttag taggacgggg tttccccatg 7920
ttggccagge tggtettgaa ateetgaeet caggtgatee geeegeeteg geettecaaa 7980
atgttggggt tacaggcatg agccgccgca cccgacccct ctgtccatct tttcaatggg 8040
aaactccaca ccagtgtggt ggccctgccc ttcctgctgt ccccaggtga agctttcctt 8100
cacaccagtg caagaaaaaa cagcttgtag gaaagcagag gatatgggta accacgggaa 8160
gcacactcag ttctctggct gcatcagtta ggattagttt tagctgagag cgaaaacccc 8220
aaatgttggt gagttacaag cttatttctc tcatgtaaaa gtctagaggt aggtagttca 8280
ggactggtat ggagtctcca tgaccctccg gagcccaggc tctcttctgc cttcctgttc 8340
tgccatcete actaceegge ttteecatet tggcceaaga gggetgetea aacteeagee 8400
atctagtcga cactctagct atcagtaaga aggaagggca aagattgaga gcatgcctca 8460
atcttttaag aacacttctt ggctattact aattatattg ctgcttagat ttcagaactt 8520
aatggtatgg gcagaattta atgagatggg cccagctaaa agatggggga atctattgct 8580
aagaaagtat agatattggg aatgtctagc agcctgtgct gtcttgggct ggccatgcca 8640
tgtacataca cactatttcc cagcaccaag ctggggactc tgagggaaag ggtccagagt 8700
gtctgacttg atcattttga tgtggcctaa aaatcaagct tttaattgtt cagcctttta 8760
cttgttatca aggtcagctt gtgggtctaa ttgggcccaa ggcttgtgtt tctaagtaaa 8820
gttttattgg aacgcagcca tacccattta tttacttact ggctgcttca cactacacag 8880
ttgagtaget gtgacagaga ccacatggee cacagageet aaaatatttg etgtetgaca 8940
```

```
ctttacagaa tgacatgagc agtctccttt gacagtggga ctcacagcct tttccagtga 9000
caaatcaggg ttagcccatg tgtttctgga tggggggaag ctgttggcat tttgggtata 9060
acagttettg tgagacetgt ceageatttt geaggacace taacateatt ggeeetgeet 9120
gcaagatgac agggcactcc ctcctccagt cacaaccact aaaagcagcc cctgacattt 9180
ccaaacccat gccctccacc atacgagaac caggtacagg gtctggctga cacataggtc 9240
acacgcaaag ggtggatgtc agaggtggct ggcctcacac gtcctccctg tgtccttcac 9300
ggtcgtgtga ggagccaggg gctgtgctgc agcctcgctc atgggctggt gcaggatggg 9360
tctggcggcc ccacgttggc caggctttgt aaggggctat ttggctgatt gctgtggcca 9420
ttctccaggg gcgtctatac ctgagaaaac tccagggcct gaaggcttct ggatctttgt 9480
aagattaatg gtccttcata atgagtgcct gccctgactc gtaatttttt tgctgtttta 9540
tttcagactc agcgtaaacc agatcactga cggtggggta aaggtgctaa gcgaagagct 9600
gaccaaatac aaaattgtga cctatttggg gtatgtcttt ctccagaaca ctgggccaac 9660
tacctagtaa taatacagag ctgcagggaa ttcacattcc cataggtccc tggatgatcg 9720
qcacqqatqq cccagggctq ggaagagcgc tggcccagga gttgagagtc ctgggttctc 9780
tttgtggctc ggccagtcat gaagtcttgc tgagcctcag cctcctcacc tgtaaaactg 9840
ggatcccagt ataggcaagt aggcttacaa ctggttattg ggggatgcaa cgagaatata 9900
aggggatata tttaataaat gctagaatcc tgtttacata ttagtctgga ctattttggg 9960
tccataatcc ctcatccaga gcctttgggg caagacccga atggggattc tgagtgcatg 10020
ctatggcatg acgtggccgc aggggtctaa ggcagtgccc cattttcaaa cactttcata 10080
tttctcccgc agaatgtatg aaacagtcaa accaagtgtg gtaagaaaga ctataagtag 10140
ctccacatca gttgccaaaa gaattgtgag aaactttggg cattcagagc ctttgaggtt 10200
ttggagtctg agagaaggga ttgcgggcca gccccacaca actggtggct ctgcaagctg 10260
gagcagttgt tcagtttctt ggggcctcag tggccttcga tgttaatgag gacatggacg 10320
caaacgaccc cgggccacac tcggctccag ggctctgtgt ggctgtggaa ccctggaagc 10380
ctgagcttag ctgcctttca acttccatct gctgtactat tgaattggca ttgagcggtg 10440
agatggctga aaggtagaca tcgagaagtt ttaatattca gaatcttttc ttctcaagac 10500
gctgaatgta atcttagttg taaataccca tcacctgcca gtcaccgagc actcatgcac 10560
cagggctttg cgttatgtcc taagatcctc ataaccaccc tgcaagggga ctatcatcat 10620
tacctctgta ttacagatgg agaaactgag gcacagagag gtaacgtgac ttgtctcagg 10680
ccataaagct ggggaaagta gtggagctgg ttttgaacct gagctgtgag acctcagagc 10740
cctaaactct ggtgcctgtg tgttcccctt tcaacccaga ctttggaaat cagtagacac 10800
catatgcttc aaaaaacagg ggctattaaa atgacatcag gagccagaaa gtctcatggc 10860
tgtgctttct cttgaagttt atacaacaac cagatcaccg atgtcggagc caggtacgtc 10920
accaaaatcc tggatgaatg caaaggcctc acgcatctta agtaagtggg gtaggcacca 10980
ggttccttag tatattctct tgatcacccc cttctgttgt tcaaagatta aatgtcacag 11040
taaagagett teateetaaa geetteeaet tgteeeaggg ceatgttggt caagtaaaga 11100
tacctctgtg tgatctgtga ggcttggatt ctggaagggc ctcccgttat tggtaggggg 11160
aaaggttggc attttgattt cattaactac taggccgaag aaaggactaa ctctcaccct 11220
ttctggtggt ctttttgccc caagggagtt tcctgtcggg ttgcaaggaa gagcttgggc 11280
cettgecetg etgtaggtgt geeetgegea gggggtgaca gtgegeeagg ettggageet 11340
ctggtcctgc cctgacagtg gccacatacc ttgacccttg gcagtcaaag tgggacctcc 11400
caggtctccc gagggaagtc agtgatgctg ctgaggtcaa ttagaggacc ccagggaggg 11460
ctcaggtccc tgagcttctg cagagactgt ggaccatctc ctggagagga accctgactg 11520
actgtcctca gggcttcagt tecetecetg acaggaggee caggecatgg ctettgtgga 11580
tcccagaaga aagtgtacgg ttcccaagat ggggctggaa ggggctctgt gctggggagg 11640
agggtgaccc acattggagc ccctgcatag ctggaggctg actgtgtgtg actctctctg 11700
cagactggga aaaaacaaaa taacaagtga aggagggaag tatctcgccc tggctgtgaa 11760
gaacagcaaa tcaatctctg aggttgggtg agtagaaggg gatggatgta tgtggtacaa 11820
cctqctqtqt gtgtgggggg cgggccttgc tgttcttttc atacatcagt acaccagaag 11880
gaccactggg getegetgte ggggagagat agtggagage tttcaccatg etgegaaact 11940
gaaaccgtgc ccattaagca ataactcccc ggtccccctc ccccctgcct cttgcagcca 12000
ccctgctact tactctctct atggttttga ctactctacc tcatgtaagt ggaatcatac 12060
agtatttgcc ttttggggat ggctgatttc actagcatca tgtcctcaag attcgtccac 12120
atggaagcat gggacaggat ttcctttttt ttttttttt ttttttttt tgacagagtc 12180
tegetetgtt geeeaggetg gagtgeagtg geatgatete ggeteaetge aacetetgee 12240
ttctgggttc aagcgattct ctcgcctcag ccacacgagt agctgggatt ataggcaccc 12300
gccaccaatc ccagctaatt tttgtatttt tagtagaggc ggggtttcac catgttggcc 12360
aggetggtet caaacteetg aceteaaatg atecacecae eteggtetee caaagtgtea 12420
ggattatagg cgtgagccac cgtgccccgc caggatttcc ttcttttta aggctgagta 12480
```

```
atactccatt gcatggctat gccacatttt gtttactcat tcatccaaga acagacactg 12540
gcttgcttct atgctttggc tgttgtgaat aatgctgctg tgcacatggg catacaaatg 12600
totottoaag gaotgootto aattottitt tittititt tittititta gattotitti 12660
ttttttatta tactctaagt tttagggtac atgtgcacat tgtgcaggtt agttacatat 12720
gtatacatgt gccatgctgg tgcgctgcac ccactaatgt gtcatctagc attaggtata 12780
tctcccaatg ctatccctcc cccctccccc gaccccacca cagtccccag agtgtgatat 12840
tccccttcct gtgtccatgt gatctcattg ttcaattccc acctatgagt gagaatatgc 12900
ggtgtttggt tttttgttct tgcgatagtt tactgagaat gatggtttcc aatttcatcc 12960
atgtccctac aaaggatatg aactcatcat tttttatggc tgcatagtat tccatggtgt 13020
atatgtgcca cattttetta atecagteta teattgttgg acatttgggt tggttecaag 13080
tctttgctat tgtgaatagt gccacaataa acatacgtgt gcatgtgtct ttatagcagc 13140
atgatitata ctcatttggg tatataccca gtaatgggat ggctgggtca aatggtattt 13200
ctagttctag atccctgagg aatcgccaca ctgacttcca caatggttga actagtttac 13260
agtcccacca acaqtqtaaa agtgttccta tttctccgca tcctctccag cacctgctgt 13320
ttcctgactt tttaatgatt gccattctaa ctggtgtgag atgatatctc atagtggttt 13380
tgatttgcat ttctctgatg gccagtgatg atgagcattt cttcatgtgt ttttttggctg 13440
cataaatgtc ttcttttgag aagtgtctgt tcatgtcctt cgcccacttt ttgatggggt 13500
tgtttgtttt tttcttgtaa atttgtttga gttcattgta gattctggat attagccctt 13560
tgtcagatga gtaggttgcg aaaattttct cccatgttgt aggttgcctg ttcactctga 13620
tggtagtttc ttttgctgtg cagaagctct ttagtttaat tagatcccat ttgtcaattt 13680
tgtcttttgt tgccattgct tttggtgttt tggacatgaa gtccttgccc acgcctatgt 13740
cctgaatggt aatgcctagg ttttcttcta gggtttttat ggttttaggt ttaacgttta 13800
aatctttaat ccatcttgaa ttgatttttg tataaggtgt aaggaaggga tccagtttca 13860
gctttctaca tatggctagc cagttttccc agcaccattt attaaatagg gaatcctttc 13920
cccattgctt gtttttctca ggtttgtcaa agatcagata gttgtagata tgcggcatta 13980
tttctgaggg ctctgttctg ttccattgat ctatatctct gttttggtac cagtaccatg 14040
ctgttttggt tactgtagcc ttgtagtata gtttgaagtc aggtagtgtg atgcctccag 14100
ctttgttctt ttggcttagg attgacttgg cgatgcgggc tcttttttgg ttccatatga 14160
actttaaagt agttttttcc aattctgtga agaaagtcat tggtagcttg atggggatgg 14220
cattgaatct gtaaattacc ttgggcagta tggccatttt cacgatattg attcttccta 14280
cccatgagca tggaatgttc ttccatttgt ttgtgtcctc ttttatttcc ttgagcagtg 14340
gtttgtagtt ctccttgaag aggtccttca catcccttgt aagttggatt cctaggtatt 14400
ttattctctt tgaagcaatt gtgaatggga gttcacccat gatttggctc tctgtttgtc 14460
tgttgttggt gtataagaat gcttgtgatt tttgtacatt gattttgtat cctgagactt 14520
tgctgaagtt gcttatcagc ttaaggagat tttgggctga gacgatgggg ttttctagat 14580
aaacaatcat gtcgtctgca aacagggaca atttgacttc ctcttttcct aattgaatac 14640
cctttatttc cttctcctgc ctgattgccc tggccagaac ttccaacact atgttgaata 14700
ggagcggtga gagagggcat ccctgtcttg tgccagtttt caaagggaat gcttccagtt 14760
tttgcccatt cagtatgata ttggctgtgg gtttgtcata gatagctctt attattttga 14820
aatacgtccc atcaatacct aatttattga gagtttttag catgaagggt tgttgaattt 14880
tgtcaaaggc tttttctgca tctattgaga taatcatgtg gtttttgtct ttggctctgt 14940
ttatatgctg gattacattt attgatttgc gtatattgaa ccagccttgc atcccaggga 15000
tgaagcccac ttgatcatgg tggataagct ttttgatgtg ctgctggatt cggtttgcca 15060
gtattttatt gaggattttt gcatcaatgt tcatcaagga tattggtcta aaattctctt 15120
ttttggttgt gtctctgccc ggctttggta tcagaatgat gctggcctca taaaatgagt 15180
tagggaggat tccctctttt tctattgatt ggaatagttt cagaaggaat ggtaccagtt 15240
cctccttgta cctctggtag aattcggctg tgaatccatc tggtcctgga ctctttttgg 15300
ttggtaaact attgattatt gccacaattt cagagcctgt tattggtcta ttcagagatt 15360
caacttette etggtttagt ettgggagag tgtatgtgte gaggaatgta tecatttett 15420
ctagattttc tagtttattt gcgtagaggt gtttgtagta ttctctgatg gtagtttgta 15480
tttctgtggg atcggtggtg atatcccctt tatcattttt tattgtgtct atttgattct 15540
totototttt tttotttatt agtottgota goggtotato aattitgttg atcotttoga 15600
aaaaccagct cctggattca ttgatttttt gaagggtttt ttgtgtctct atttccttca 15660
gttctgctct gattttagtt atttcttgcc ttctgctagc ttttgaatgt gtttgctctt 15720
gcttttctag ttcttttaat tgtgatgtta gggtgtcaat tttggatctt tcctgctttc 15780
tettgtagge atttagtget ataaatttee etetacacae tgetttgaat gegteecaga 15840
gattctggta tgtggtgtct ttgttctcgt tggtttcaaa gaacatcttt atttctgcct 15900
tcatttcgtt atgtacccag tagtcattca ggagcaggtt gttcagtttc catgtagttg 15960
ageggetttg agtgagatte ttaateetga gttetagttt gattgeactg tggtetgaga 16020
```

```
gatagtttgt tataatttct gttcttttac atttgctgag gagagcttta cttccaacta 16080
tgtggtcaat tttggaatag gtgtggtgtg gtgctgaaaa aaatgtatat tctgttgatt 16140
tggggtggag agttctgtag atgtctatta ggtctgcttg gtgcagagct gagttcaatt 16200
cctgggtatc cttgttgact ttctgtctca ttgatctgtc taatgttgac agtggggtgt 16260
taaagtctcc cattattaat gtgtgggagt ctaagtctct ttgtaggtca ctgaggactt 16320
gctttatgaa tctgggtgct cctgtattgg gtgcataaat atttaggata gttagctcct 16380
cttgttgaat tgatcccttt accattatgt aatggccttc tttgtctctt ttgatctttg 16440
ttggtttaaa gtctgtttta tcagagacta ggattgcaac ccctgccttt ttttgttttc 16500
cattggcttg gtagatcttc ctccatcctt ttattttgag cctatgtgtg tctctgcacg 16560
tgagatgggt ttcctgaata cagcacactg atgggtcttg actctttatc caacttgcca 16620
gtctgtgtct tttaattgca gaatttagtc catttatatt taaagttaat attgttatgt 16680
gtgaatttga teetgteatt atgatgttag etggegattt tgeteattag ttgatgeagt 16740
ttcttcctag tctcgatggt ctttacattt tggcatgatt ttgcagcggc tggtaccggt 16800
tgttcctttc catgtttacc gcttccttca ggagctcttt tagggcaggc ctggtggtga 16860
caaaatctct cagcatttgc ttgtctataa agtattttat ttctccttca cttatgaagc 16920
ttagtttggc tggatatgaa attctgggtt gaaaattctt ttctttaaga atgttgaata 16980
ttggccccca ctctcttctg gcttgtaggg tttctgccga gagatccgct gttagtctga 17040
tgggctttcc tttgagggta acccgaactt tctctctggc tgcccttaac attttttcct 17100
tcatttcaac tttggtgaat ctgacaatta tgtgtcttgg agttgctctt ctcgaggagt 17160
atctttgtgg cgttctctgt atttcctgaa tctgaacgtt ggcctgcctt gctagattgg 17220
ggaagttete etggataata teetgeagag tgtttteeaa ettggtteea tteteeacat 17280
cactttcagg tacaccaatc agacgtagat ttggtctttt cacatagtcc catatttctt 17340
ggaggetttg eteatteett tttattettt tttetetaaa etteeettet egetteattt 17400
cattcatttc atcttccatt gctgataccc tttcttccag ttgatcgcat cggctcctga 17460
qqcttctqca ttcttcacgt agttctcgag ccttggtttt cagctccatc agctccttta 17520
agcacttctc tgtattggtt attctagtta tacattcttc taaatttttt tcaaagtttt 17580
caacttettt geetttggtt tgaatgteet eeegtagete agagtaattt gategtetga 17640
agcettette teteageteg teaaaateat tetecateea getttgttet gttgetggtg 17700
aggaactgcg ttcctttgga ggaggagagg cgctctgcgt tttagagttt ccagtttttc 17760
tgttctgttt tttccccatc tttgtggttt tatctacttt tggtctttga tgatggtgat 17820
gtacagatgg gttttcagtg tagatgtcct ttctggttgt tagttttcct tctaacagac 17880
aggaccetca getgeaggte tgttggaata eeetgeegtg tgaggtgtea gtgtgeetet 17940
gctggggggt gcctcccagt taggctgctc gggggtcagg ggtcagggac ccacttgagg 18000
aggeagtetg ecegttetea gateteeage tgegtgetgg gagaaceaet getetettea 18060
aagctgtcag acagggacac ttaagtctgc agaggttact gctgtctttt tgtttgtctg 18120
tgccctgccc ccagaggtgg agcctacaga ggcaggcagg cctccttgag ctgtggtggg 18180
ctccacccag ttcgagcttc ccggctgctt tgtttaccta agcaagcctg ggctatggcg 18240
ggcgcccctc ccccagcctc gttgccgcct tgcagtttga tctcagactg ctgtgctagc 18300
aatcagcgag attccgtggg cgtaggaccc tctgagccag gtgtgggata tagtctcgtg 18360
gtgcgccgtt tcttaagccg gtctgaaaag cgcaatattc gggtgggagt gacccgattt 18420
tccaggtgcg tccgtcaccc ctttctttga ctcggaaagg gaactccctg atcccttgcg 18480
cttcccaggt gaggcaatgc ctcgccctgc ttcggctcgc gcacggtgcg cgcacacact 18540
ggcctgcgcc cactgtctgg cgctccctag tgagatgaac ccggtacctc agatggaaat 18600
gcagaaatca cccgtcttct gcgtcgctca cgctgggagc tgtagaccgg agctgttcct 18660
atteggecat cttggetect ccctccaatt cttttgggta tatatccage agtgggattg 18720
ctggatcaca tggtaatttt taattttttg aagaatcatc atactgtttt ccacggcagc 18780
agcaccattt tatgttccca ccaacagttc attctagttt ctccacatcc ttgccaacac 18840
tigctatttt ctcittttga cagtacccat cctaatgagt gtgaggtcct gtctcattgt 18900
ggttttgatt cttgaggctt tttaaagctt tttgtttcat tataattttt attggattac 18960
aaaaggaaca caggtaattt tatttggaaa ctatgaaaaa taataaaaat tatcttctca 19020
gaaaatgatt cttgttaaca tttaagctca gttaagctct ctcactttct ctcccttctc 19080
gtaggggtga gactatatgt atccttcctt tttcacttaa tctcatgcct tgagtagctt 19200
tccactttat taaaaatgtg atgccattca attgtatagt aaatacatat atgtaagcaa 19260
aacactgaaa actettatte tgggtteeag caagecatae etggaatggt gtaageaggt 19320
agtttgcttg gtgtgaacgt gttgttgagg cagctgccat tgtgttgtga gtgggccaca 19380
cgaacttgtt ctgttgtgtg tagacagtgt gtgctgatcc tattaggaac agccaacgct 19440
ttgtgtgagc cacacacggt tctaagtgct ttgcttctgt taactcagtg aatcctcaca 19500
actccatgac ggaatgctct aattatcccc attttataga tggggcaact gaggtccaag 19560
```

```
agactacata atttcccgaa gttcacacag gtagcagatg gcagagccgg gtcaggagtc 19620
caccatetta ecaegeagae tgttttagee agagaetete eggatetget gtaggggaea 19680
gaatacaget ttategeege acetgteeae caagatggee gtageeacag agettggttg 19740
ggtaacgtcc tetttatgtg acaggaacgt tgctgatggg gtttctgaag gtacttcctg 19800
ctctttgtct cctggaagac tgtgtcttca ggaatgtctc tgaccctgcc cagagttgaa 19860
cggatgctgg gaacccagca cctgcacacg gccttccctc caggactctg cgcacctctg 19920
tgctccacag gagacatgca ggtgctttct ctcatgagct caggctcctg ggctgacagc 19980
teteegaage tegtggtgag geteggtete taaetgtgee aettgeegat ggeetetgtt 20040
cacaaggett eccetgetet tegatettge atcacecett gaatttgaaa tecagageag 20100
cccactcaga gaccagtgtg aggaattagt gtccaggcca cagatccagg gactgggcac 20160
aaacatctgc ctgttgagta ggaactgagc tgtggccatt ggcaaaaaag gaggggtgag 20220
catggctgtt tcttggggag ctaacattca ctatcttgtc tcctccctca ggatgtgggg 20280
caatcaagtt ggggatgaag gagcaaaagc cttcgcagag gctctgcgga accaccccag 20340
cttgaccacc ctgaggtaac tgtggccctg ctgtctccag gggccaacct ggtccctccc 20400
agctgctcta ggtttgctgg ggaagggtga ttcgtgctcc taatagaaga ggaatttgca 20460
tgtgtgattt tccttactct tgtcaaacct ttctttgatg cataagaggc catctagtaa 20520
agcacattct tctcttttt taactttaag ttctgggata catgtagaag atgtgcaggt 20580
ttgttacata ggcaaatgca tgccatggtg atttgctgca cctatcaacc tgtcatctag 20640
gttttaagcc ctgcatgcat taggtatttg tcctaatgct tgccctcccc ttgcccccca 20700
cccccaacag gccctggtgt gtgttgttcc cctccatgtg tccatgtgtt ctcattgttc 20760
aactcccact tacgagtgag aacatgcagt gtttggtttt ttgttcctgt gttagtttgc 20820
tgagaatgat ggtttccagc ttcatccatg tgccagcaaa ggacatgatc tcatttttt 20880
ttatggttgc atagtattcc atagtgtgta tgtgccacat tttctttatc cagtctatca 20940
ctgatgggca tttgggttgg ttccaagtct ttgctattgt aaatagtgct acaataaaca 21000
tacatgtgct tgtgtcttta tagcagaatg atttataatc ctttgggtaa atacccagta 21060
atgggattgc tgggtcaaat ggtatttctg gttctagatc cctgaggaat caccttaagt 21120
gtttattcag ctcagtgaat tctgcatgtg tcccacacca gccaaccacc acccccatca 21180
agacagagga catttccagc ccctcagcca tecetgeatg tecettgetg gtagagggag 21240
ggtttcctaa gtgcagatga aacttaataa gatgctggcc agcagattcc tgccccttcc 21300
ttgtcctcag gatgatgctg gaaaagaggg actcttcctc tctataaatg gggatgcacc 21360
tacccagece cegettagge tgetggecaa atettgggae ettggtatgt ceaeggetet 21420
gctgctgttc ttcctaccac tgaaaaagag tccaagaagg tggggacagt agcagaagag 21480
actttgccag gtcttgcaga tggggtacct tgatggggcc agcctttaga aggacagctt 21540
gccaggecte gccagectee tgcccatgtg cagaaacetg aggtgccgae cccageceae 21600
tgttgtgtga gcaggctgtg ctgatgaccc atttcccgtc cagcctgccc ttgtgctctg 21660
tgtgtggget etggggeage agegeetggg eactaetget geagetgaae aettetgeat 21720
cctgccccga gtgagcctgg gctggggcca cagccaggca gaggcttccc agctgttctg 21780
atgttgaage taagattgaa tgtagatgtg tetttaataa tteaececaa gtgtgtteet 21840
tectagtett gegteeaacg geateteeae agaaggagga aagageettg egagggeeet 21900
gcagcagaac acgtctctag aaatactgtg gtaatagctc gagtcatttc atttgtttgt 21960
ttgtttttct gtgatagggt cttgctttgt cgtccaggct tgagtgcatt ggtgtgatct 22020
cageteactg cageetecae eteccagget cattegaace tecegeettg geetteegag 22080
tcctgagact ataggcatgc accaccacac ccagttaatt ttaaaatttt ttgtagagat 22140
ggggttttgc tatgttaccc aggctggtct tgaactcctg ggctcaagca gttctcctgc 22200
cctggcttct caaagccctg ggattgcagg tgtgagccac tgcacctggc acagagtcat 22260
tttggagggt ttaggtccca ggaattatcc caggggctgc acatggcctg gaatcttaac 22320
agaaaaggtg teteceaatt ggaaaggete taggeettte agttaagttg ataattteet 22380
cctagagaag agaatagcca cttctacaag cataaacagg tacaggagga ggaagtgggc 22440
teegggagee tggatetgag geettggeet tetaggeece aggagaaeta gaaegetgge 22500
catgcaagct atccaggtat ccttggatac cttcagatgt gcttagcaga ggccaacttc 22560
cacacacttg gctcaaaatt ttctcccttc ctcctcttca tctgccttcc cccaggcagc 22620
ctcctccttc cccaggtctt cacatcaggg tttggccttt atgctccatc cagctcatct 22680
gtcacttgtc acctgaagcc cacagtcctc gctccctctc tgcactctag ggcacttact 22740
aagtggatgt ggcctcctga gagtgttttt tgttggtgtt ccctttttta tggccactta 22800
atgttttatt ttgctttatt tgtatttaca tctctgtatc ataaattcca tacaggtggc 22860
tgggagcagt gactcacatc tgtaatccca gtactttgga aggctgaggt gggaggatcg 22920
cttgaggcca agagttcgag actagcctgg gcaatatagc gagaccctct atctacaaaa 22980
aaaaaaaaca ttccttacag gttaagtgag ggagttgtat tacaaccctc cctatcatct 23040
actcagagcc cagtgctcat ttgatcttgc taaattagtt actgagaata atgacaatat 23100
```

```
cctcttcatg agagagtttt gacattaggc ctgctgtcca gtaagtgcat tttaaattct 23160
ttcccctcaa caaatcattt aacattttga aaagtagttt atgttttttg gaaaaaatgt 23220
aagacactaa aggaggacat gaaagtacct cctaaagttc ctgctaaaag gaggaagtga 23280
aagtacetee etttgtgttt teeaaaataa eettteettt etageetttt gttetatgta 23340
tgttcaaaga tatgcaaaac agaatagcat tcaagcagtg gctctaaaaa tattgtaatc 23400
acatacttta catgteteet ttagggttte tecatettga tgetgttgae attttggtee 23460
aagtgattet ttattatggt agggetgtee tgtgeateat agaeggttta geegeatete 23520
tgccctgtac ctcccagtgg tgaggatcaa aaatgcctcc ggacatggcc aggtgcccca 23580
tggagagtga aatcacatgg atagtagtaa tgtcaacacc tagaagccct caagtgctga 23640
ctgcatgcca tgtgttattc tacacttttt ccctgtgtta actcactcag cctcacaacc 23700
actetatacg atetetactg ttaacgttca ecagtgagaa aacteagace caaagaactt 23760
aagcetgttg ceegaggtea eeetgetggt gggtgataca aacetgeeca ggetgagtee 23820
ggagtagatg tcaatgctgt gttcttctcc ctcctcattc tacctcattc tccctacaag 23880
ctgcacaaca tctcgaatag atatcacaat atatttcatc agttgtttct gatctaaatt 23940
tgttcagatt ttacattagg ataataccac aatgcatgct gcaatgtata aagctttgtg 24000
tgtatatcct tgcacactgt agggtaaatt tctagaagtc tgattgtctt aaaatgaagc 24060
acattaaaaa tttgggcagg cacatccaaa ctgcccttca aggaattttt ttttttaaat 24120
gttetttetg ttetattett etteetaatg attetttegt eeactggeac aagtgggtee 24180
taccetgttt acaccaagga getttggtge tttatecaga ecaettetgg ttetaaggae 24240
cattgagaga cttcctgaac tttcagtcac ttaacttggg tccctcacaa gttaactgag 24300
agcaaagtac tgaacacatt ttaatgtgca gtcagtgact gtttcaggtc ttcaaactaa 24360
cttggataac acactgtcag tggtgttcaa gggaccctgg gactagagga gaactgagaa 24420
geaggeattg geeetttgtt tteegtggge ecceatette catgaaatet gagggeteag 24480
caaaggtggg gagggagggt gggctcctct acaggtagct gggctaagaa ataggagccc 24540
aggtacagga tttgcattaa aaatgagtcc cattgacctt ctgtggggct gacaggctgg 24600
gcttggagcc tggctgtttt ctgggttctc agcaagtgat catctgcata gctggagagc 24660
cttgggctga gctcccgctc ctgtgaactc taaaacaatg tctgccaagt aggctctctt 24720
gagtaaatac ttcctttttt ttccttaggc tgacccaaaa tgaactcaac gatgaagtgg 24780
cagagagttt ggcagaaatg ttgaaagtca accagacgtt aaagcattta tggtaactca 24840
gagagcctta caatttcaga ctgtgctact tttcaaaagt attttttgag ataaaattta 24900
catactgtaa aattcactct cttaaagtat acaattcaga ggtttttagt gcaaccatca 24960
ccacctaatt ctagaacatt ttcactcctc ctccccactc caaaaagccc tggtatccat 25020
taagcagtca ctccctgtcc tcctccccag accctggcaa ccactaatcc gctttctgtc 25080
tctatggatt tgcctactct gggcatttca tataaatgga atcaagcaat atgtgacctt 25140
ttgtctctgt gttctagcat gtttcattcc tttttatggc taaatgataa ttcactctaa 25200
ggaaattttg cagtttatta atcagttgat gggacatttg ggttgtttct actttttgac 25260
tattatgegt aatgetaetg tgaacaetee tgtteatget tttgggtgaa catatgtttt 25320
catctctttt gggaatatac ctgggaatag aatttctggg tcatatggca attctgtaac 25380
tttttgagga gccaccaaac tgttttctaa agtggatgta ctattttaca ttctcgccag 25440
caatgtatgt ggattccaat ttctccacat cctcaccaac acttattatt gtccatcttt 25500
taaaatctag ttatactagt ggatgtgaag taatattgtg gttttgattt gcatttccct 25560
gatgacaaca atgttgaatg tetttttatg tgeetaetgg gagtetgtat agettetttg 25620
gagaaatgtc tccatatcct ttgcccattt taaaattggg tttgtcttct aatgctgagt 25680
tataggggtt ctctatatat tctgggtgct agacctttac tagatacagg ttttgcaagt 25740
attttctttc tttctgtgga gtttttcctc tttcttgata gtgaccttta aaggacaaca 25800
gtttttaatt tttgtttttt ttgagatgga gtcttgctct tgtcacccag acaggagtgc 25860
agtggcatga teteagetet etgeaacete eaceteetgg gtteaagega ttettetgee 25920
tragcetect gagtagttgg gattacagge atcagecace atgeetgtet cattttgtat 25980
ttttaataga gatggggttt caccatttag gcccaggctg gtcttgaact cctgacctca 26040
ggtgatccac ctgcctcagc ctcccaaagt gctgggatta caggcgaaaa gccactgcac 26100
ctggccaata gtttttaatt ttgatgaagt ccaatttatc tattttttc tttggttgct 26160
tgtgctttca gtgtcttatc taagaaatga ttgcctaatc caagatcaca aagaactcca 26220
cctaagtttt ctgttaagcg ttatagttgt ttcccctcac atataggtct gcaatccatt 26280
ttgagttaat ttttgtatag tgtaaagtga gggttaacct cattctcttg cacgtggata 26340
tccagctgtc ccggcagcac cacgtgttga acagattatc ttttcctatt gaatggcctt 26400
gacaccettg teaaaaatea attgaceata aatgtatggg tttatttetg aattetetgt 26460
tetggteeat tgatttatat gteteteeta tgeeaggace attgetgtag etttgtgtag 26520
tacattttga aatcaggagg tgtgagttct actttgttct tctttctcaa gattgtttag 26580
accattctgg gttctttgca tttcttatga attcagactc accttgtcaa tttctgcaaa 26640
```

```
aagactagac tetgetacat attgttttt ettteetttt tageetgeag aattatttga 26700
teceatteee taagtgeagg ecageetete eagggagage agagetagga eagggteaga 26760
aagagagtet tggetgettt gtgeatteee aacetgeact ggeeetagtg aaggeaqeee 26820
gagtgggtgg atgtgcctgg acactgcagg ctttttaggg gcattaggtg ctctccttcc 26880
tggcctcctg ccacatcttg gttggaggct gccttccctg ccttcaaaaa agcctaagtg 26940
gtgactagaa aacagcagag tgtaactgaa tacagaactt ggtgcccact tcctggttct 27000
atttttgtcc cttttgaaag ggaaggtcat tacctctgcc attgaaccca ggggccctag 27060
ccettgtggg gtatggctgg gagcaccaga tcctggctgc agcccagcca ccagtggtcc 27120
tgtgtgcttg ggcagtaaca gtgacaagag ctcccttccc cctggacact gtgcctaata 27180
ccctcctctt gaaatctcac acacccagtg gatggggggc actcttatag ttattctcag 27240
tttacagatg acacaactga ggcacagaca gatgcgttta tttcttcaag gttctgtagc 27300
tgaacagtgg ggagggaggg tttaagagga gctgcacccg ctctgcaata ctgcctctca 27360
cgagggagtc ctcttcattc atgacagcat agggccctcg tcttcctggt aagggcttcc 27420
ttcttgggtc agtgccagga tttctaaggg tcatgtttag caggagccta ttctacaaac 27480
agccaggagc agggaatgac tctgtgatga agcggagaca ctacagcctc ttgatgcatt 27540
tatttcctgg ttgggttaga agcgtagctg cccaagggag catttcagga gaggcctggc 27600
ttcctagcga tagctgaaaa ctttgtttca tttgaatcac tgctacccag aacaatgggg 27660
tgcattctca gagtccccat tattaaagct tttccactga gccccatgag aactattcat 27720
gagaactatt tcatggcagc ataactgttt ctcctccctc cctcttgcat gttggtagcc 27780
tettaaettt aaaaeetgee ttgeetttee etagetaeet ggaaggagae gteagaette 27840
ctgtcccatg gtgtgtttct tacaatttgt tgttcagatt ggtggtctcc caaatatata 27900
taaaaatata aatggagtet eactetgtea eecaggetgg agtgeagtgg eacgatettg 27960
gctcactgca acctccacct cccagttcaa gcaattctcc tacctcagtc tcccgagtag 28020
ctgggagtac aggtgcacac caccatgccc agctaatttt tttgtatttt taatagagac 28080
aggttggcca ggatggtatc gatctcctga gctcgtgatc cacccacctc ggcctcccaa 28140
agtgctggga ttacaggtgt gagccactgc acccggcccc aaatattttg attatgcacc 28200
tctgcagtga aaaatgcaaa cacacacatc agttcatgta ttacattatg ttcactataa 28260
aaacaaacag aaaatttaaa aaatatcaag ctatccttta ctctagtgga tcttacctgg 28320
acacttttag ccagatacaa agtcacatgg actcagttct tcccctgacc aacttgtctc 28380
ttatcccaaa acacccttgc aactccctta cgaaggggtc aaatttgatc cagtattatg 28440
gattttatac aagttatgtt cttctttcag gcttatccag aatcagatca cagctaaggg 28500
gactgcccag ctggcagatg cgttacagag caacactggc ataacagaga tttggtaaga 28560
tcccagcgtt tgtcacagta ataacaccag tgactgttta ctcaccacca ctgactgtgc 28620
aaggcacaac gcagggtggt ttctgtttat tcctccagca accctgcaca gtaatggtat 28680
tacctctgtt ttacagaggt agacagaggc ccagaccagt gaaataaggt tgcccaaggt 28740
cactacgaga gaagctagaa ttcagcccag aatgcctgat tccatattct gtgctctcct 28800
gccctgggcc cccgccctca tctaccttca ttgggtggga tgggggaagt ggccagtgaa 28860
atgatttcct agtggaagta aatccccctg ggactcagca attgagagat gactgtgttg 28920
gccaggagtt tggagctcat tcttcccctt ttctgggttc cgtaagacat ttccaqqctq 28980
acttgaactg acctgtgctc tttgtctact tcttttttct gctttgagaa cttccttatg 29040
ctaatagaag aaaaaaagtt tgctttactg tgacattgag cgccatgcca cttctttctt 29100
gcctcccata aggcacagac actccccact cagcagctcc cttaacaact taattgcctg 29160
ggtgacgtgg gactgggtgg atgctgggag aggggcctta ttaactatgt cctcctttca 29220
tgactgggga gaatttcata gccaattaaa aaaaaacaaa aaacagctcc ttggccaaca 29280
caggeteete atacagtgtt tittaaaett tgetttagaa ettgtttgga aettgteata 29340
aaatatcagg atgcaatgtg catggtatga aagtatcatt tcattcatct tagttcatgc 29460
ttgcatgtga gtgggtgtgt gtttgcataa gtgttggttc acaacataaa atgtaattct 29520
tatttagggt tgtagacaaa aggtttttt ttaaaaaaaa cactgttggc taggcatggt 29580
ggctcatgcc tgtaatacca gcactttggg aggccaagat gggcagatct cttgagcaca 29640
ggagtttgag accagcctgg gcaacatgcg aaaccccgtc actacaaaaa ttagcccgac 29700
atggtgctat gtgcctgtag tcccagctac tcaggaagct gatgtgggag gatggatgca 29760
tgggagatca aggctgcagt gagccaggat catgccactg caatccagcc tgggtgccag 29820
agaccetgte teaaaaaaca aaaaagaaaa aaagaaaaac accateatag agaatagage 29880
ccagatctaa acagacacct gtggcctgtg tgcctgcgaa gcccagcctg cccagcagcc 29940
tgggaagcac tggagggcac tggaactgtt tgcatgggtg tttgccctca ggccactccg 30000
tttctgctga ttcttaagtt ttgaggacag caggcagagg gggagaggaa ggagactgcc 30060
agactacaga acagtttgca gagcacagtt ggcttccact tttctctgta gctggtcagg 30120
cgggtagtaa agacctacag ttgctttaat tctgtcaagt ttcaaaatct gcattgcttc 30180
```

cctcttgagg gtcaccattc ctacacaagg aaccatttta gtagggccag gagacttcag 30240 cttcaaggcc tgcacttgtg tcagggtgga gaggggaact ggccaccaat tcagagaggg 30300 caggacagge ggcatgggtg ctggtcttgg gagtgtcttc acttaggtcc ctggcttgtt 30360 ctgggagcct ccagagcatg ctcctctgtg tgtgacttca tgggactggg ctctgagaag 30420 gctgtggctt tgttggccct gccagggact gccacaccag gccacagggt tgtggttgag 30480 ctggccgggg agccacgttc agggagcagc tctgcttgga gccaacactt acagagtaag 30540 ccttctcctt ggacttgtta actgtactga cacttatttc tacctcattc ctttctgaaa 30600 ataacttgga agtctgaagt cccttgatga gttctgtctt taagaacaga aattagaggt 30660 gaacaatgaa cactgtaaat tacagaaatg tatcccactc cagtataaca gctttctgtg 30720 aggetatete etceagactg tggetetggg agggtgggge etgagteaag gteetaggga 30780 ctagtgctgt gtcttcattt attccttgaa taacgaaacg cttgagcatc agggactgtg 30840 ctagcaccaa aaatccagtg gtgaacaaca tggcttcatg ggttcactgt ctagaaaggg 30900 agaagcacat taaagaaaaa atcatttgcg taattattta attacaactg tgatgggtac 30960 tatcacaaag gggaaggcca agagggaacc tgatttagat gaggttgcag ggaaggcctc 31020 tctgaggaag cagcacttac actaagccat gaaggatgaa taggagctag tcagctgagg 31080 tgagtattct gcgtagggaa cagcatgtgc aaagggtctg gggcaggagg gagtgtggtg 31140 tectggaaga aetgeeagaa getgetgtge eecagggtte agaeagtgtg gaagagggga 31200 ctacaggagg ctgaggagat aggcagggac tggaccataa aagatctgtg ggtcatgatg 31260 tgcattttgg tctttatcct aaaagtgatg gaaagtcagt gaacagtttg aagcaggaga 31320 ggcatgtgat cagatctgca atgcaaaaag accaattctt ggctcttcta ggaaactgaa 31380 ttggagaagg ccagagtacg tggaaatgac ctgtcagtag gacattgtac tgatgcaggg 31440 aagagatgat gggtgctcag accaagatgg ccggccaaag acatagaggt tccagggagg 31500 cattctagat tcttaggaat taggggagaa ctttgtgata caaggaacat ggggatgaga 31560 aggaaggtgt ccaggttgac ccccaggtta ctaacctgct cagcaggatg agagtggtcc 31620 attcactaag ccaggggacc ctaggaggtg tggctacttt gaggtgtggg ggagaggtcc 31680 aagtgaggat gccaagcagg taactgcctc cacggacata caaacaaggc cgtggcattg 31740 atgagategg gtggggaaaa gggettagee ceaaacetgg aggaaatete agatgtagag 31800 gtcacatgga ggagaatata ggaaaggaaa ttgaagtaga gtgctcagat gcaggagaaa 31860 gtcaggacag ccaaaatcct gagggccaag aaagacaaga cctggaaaat gtcattaaat 31980 tcaggcttat ggaggctaca ggtgacctta gtgagaccca gtgaacagag ggatggcagc 32040 tggagaggat ccatgctaat atgaaggaac tatctgcaaa gggtatgttc cttaatttca 32100 gggatacatg tgtattgtgt gatacacgag tgtgtgctat gaacacacct tgggaaggag 32160 tgtgcgagga tccttaacat tttacctgtg tacttttgtc ttcctccttt tcaacagcct 32220 aaatggaaac ctgataaaac cagaggaggc caaagtctat gaagatgaga agcggattat 32280 ctgtttctga gaggatgctt tcctgttcat ggggtttttg ccctggagcc tcagcagcaa 32340 atgccactet gggcagtett ttgtgteagt gtettaaagg ggeetgegea ggegggaeta 32400 teaggagtee actgeeteea tgatgeaage eagetteetg tgeagaaggt etggteggea 32460 aactccctaa gtacccgcta caattctgca gaaaaagaat gtgtcttgcg agctgttgta 32520 gttacagtaa atacactgtg aagagacttt attgcctatt ataattattt ttatctgaag 32580 ctagaggaat aaagctgtga gcaaacagag gaggccagcc tcacctcatt ccaacacctg 32640 ccatagggac caacgggagc gagttggtca ccgctctttt cattgaagag ttgaggatgt 32700 ggcacaaagt tggtgccaag cttcttgaat aaaacgtgtt tgatggatta gtattatacc 32760 tgaaatattt tetteettet cageaettte ceatgtattg atactggtee caetteacag 32820 ctggagacac cggagtatgt gcagtgtggg atttgactcc tccaaggttt tgtggaaagt 32880 taatgtcaag gaaaggatgc accacgggct tttaatttta atcctggagt ctcactgtct 32940 gctggcaaag atagagaatg ccctcagctc ttagctggtc taagaatgac gatgccttca 33000 aaatgetget tecaeteagg getteteete tgetaggeta eeeteeteta gaaggetgag 33060 taccatgggc tacagtgtct ggccttggga agaagtgatt ctgtccctcc aaagaaatag 33120 ggcatggctt gcccctgtgg ccctggcatc caaatggctg cttttgtctc ccttacctcg 33180 tgaagagggg aagtetette etgeeteeca ageagetgaa gggtgaetaa aegggegeea 33240 agactcaggg gatcggctgg gaactgggcc agcagagcat gttggacacc ccccaccatg 33300 gtgggcttgt ggtggctgct ccatgagggt gggggtgata ctactagatc acttgtcctc 33360 ttgccagctc atttgttaat aaaatactga aaacactctt acgggttgag tctggagttt 33420 ttgaagggac ttggcttggt aagcactcat tgactcctga gccccatcct gattcactcc 33480 acagtgggga aggggctctg gggtgatgtg ctatgaggag agcctgatga aggccagggg 33540 tgtcaccagt ttgatcette acaggeetet etgeetacca agggacagga ageggetgtg 33600 gcagcctctg aggtctctcc atctggcctc tgaatctctt caggtggctt ctcagaggaa 33660 ataacttgtg agtagggggt ggctggtgcc aggacaggcc aagtgggcca aagttcatgc 33720

```
cttcatcacc atgccatggt agagcccacg ggccaggttc gacgtccact accttcctcg 33780
gctgttcact gctgagtggc ggatccaggt aggcccatgg caagaagcac cgagctgcca 33840
ggggcagcac gtgacagagg aaggcatgca gggcctccaa cggtccacct ctgagttctt 33900
atgagtccaa gcctggcttt gtagagcagc ctgttaggaa ggggaccgtt gcgggggaaa 33960
tcctgtacag ttaagcaact acaaggcggc agttccttaa a
<210> 16
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Antisense Oligonucleotide
<400> 16
cctgacttac aatcacttgg
                                                                      20
<210> 17
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Antisense Oligonucleotide
<400> 17
                                                                      20
agcaacttgt cttcccagac
<210> 18
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Antisense Oligonucleotide
<400> 18
aattgcttct gtctcttcca
                                                                      20
<210> 19
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Antisense Oligonucleotide
<400> 19
aacattgttt aaatcttcaa
                                                                      20
<210> 20
<211> 20
<212> DNA
<213> Artificial Sequence
```

<220> <223> Antisense Oligonucleotide	
<400> 20 gtcctctcag cagaagggca	20
<210> 21 <211> 20 <212> DNA	
<213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 21 ctgctcttcc atagttaaag	20
<210> 22 <211> 20	
<212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 22 tctgatggga ttatttccat	20
<210> 23 <211> 20 <212> DNA	
<213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 23 ccagaagttc ccgattgctt	20
<210> 24 <211> 20	
<212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 24 ttttgcggac cttgtcaggc	20
<210> 25	
<211> 20 <212> DNA	
<212> DNA <213> Artificial Sequence	

<220> <223> Antisense Oligonucleotide	
<400> 25 tgctgggtat acctgctcac	20
<210> 26 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 26 tcattgagga tgccggtggt	20
<210> 27 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 27 tcacccagga tgaagatggt	20
<210> 28 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 28 cagctcgtcc aggccatcga	20
<210> 29 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 29 tcaggtccaa gtccgagtgc	20
<210> 30 <211> 20 <212> DNA	

<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 30	
tagccccctt gagcagcttc	20
<210> 31	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 31	
ctcgatgcct gtgcgggctg	20
<210> 32	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
•	
<400> 32	
tccagctggc tcagcaggcg	20
<210> 33	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 33	
cggaagtgct ggaagcaccg	20
<210> 34	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 34	
catectotte agatogaeet	20
catcctgttc agatggacct	20
catcctgttc agatggacct	20
<210> 35 <211> 20	20

<212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 35 caccaggctg ctgggctgca	20
<210> 36 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 36 cacagagtgt cccggccggc	20
<210> 37 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 37 gccccagcga gcacagagtg	. 20
<210> 38 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 38 cctgcacctc ctcctgggtg	20
<210> 39 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 39 tgtcgtccag cacgaggaag	20

<210> 40

<211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 40 gtggtcgctg ccccgcagg	20
<210> 41 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 41 gcaggacgtg gtcgctgccc	20
<210> 42 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 42 tggaagtgat ccttgttctt	20
<210> 43 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 43 ccgcaggagt ttctgtttgg	20
<210> 44 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 44 gccttgcgct ttctcctcag	20

<210> 45 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 45 cccgcaggct ggaaaacagg	20
<210> 46 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 46 ttgcagtagg tcagcttgag	20
<210> 47 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 47 gggctgcagc tcccgcacgc	20
<210> 48 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 48 aacagtgagg cggctgaagc	20
<210> 49 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 49 tctggttgtt gtataaaccc	20

<210> 50 <211> 20	
<212> DNA <213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 50	2.0
tttgctgttc ttcacagcca	20
<210> 51	
<211> 20 <212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 51 ggttccgcag agcctctgcg	20
<210> 52	
<211> 20 <212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 52 ggacgcaaga ctcagggtgg	20
<210> 53	
<211> 20 <212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 53 ccctcgcaag gctctttcct	20
<210> 54	
<211> 20 <212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 54 ctggataagc cataaatgct	20

```
<210> 55
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Antisense Oligonucleotide
<400> 55
aaatctctgt tatgccagtg
                                                                        20
<210> 56
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Antisense Oligonucleotide
<400> 56
tccatttagg caaatctctg
                                                                        20
<210> 57
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Antisense Oligonucleotide
<400> 57
ctcctctggt tttatcaggt
                                                                       20
<210> 58
<211> 20
<212> DNA
<213> Artificial Sequence
<220>
<223> Antisense Oligonucleotide
<400> 58
agcatcctct cagaaacaga
                                                                       20
<210> 59
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Antisense Oligonucleotide
<400> 59
```

cagggcaaaa accccatgaa	20
<210> 60 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 60 gcctgcgcag gcccctttaa	20
<210> 61 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 61 gtctcttcac agtgtattta	20
<210> 62 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 62 gcctcctctg tttgctcaca	20
<210> 63 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 63 atgaggtgag gctggcctcc	20
<210> 64 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	

<400> 64 caactttgtg ccacatcctc	20
<210> 65 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 65 gggaccagta tcaatacatg	20
<210> 66 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 66 tgcatccttt ccttgacatt	20
<210> 67 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 67 gccagcagac agtgagactc	20
<210> 68 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 68 agagctgagg gcattctcta	20
<210> 69 <211> 20 <212> DNA <213> Artificial Sequence	
<220>	

<400> 69 gaagcagcat tttgaaggca	20
<210> 70 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 70 tactcagcct tctagaggag	20
<210> 71 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 71 cagctgcttg ggaggcagga	20
<210> 72 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 72 gctggcccag ttcccagccg	20
<210> 73 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 73 ttaacaaatg agcgggcaag	20
<210> 74 <211> 20 <212> DNA <213> Artificial Sequence	
<220>	

<223> Antisense Oligonucleotide	
<400> 74 tcagtatttt attaacaaat	20
<210> 75 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 75 agatacacac tcactcagtg	20
<210> 76 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 76 tttccaaagt cccaaatagg	20
<210> 77 <211> 20	
<212> DNA <213> Artificial Sequence	
<213> Artificial Sequence <220>	20
<213> Artificial Sequence <220> <223> Antisense Oligonucleotide <400> 77	20
<213> Artificial Sequence <220> <223> Antisense Oligonucleotide <400> 77 ttttcccagt ctggctccga <210> 78 <211> 20 <212> DNA	20
<213> Artificial Sequence <220> <223> Antisense Oligonucleotide <400> 77 ttttcccagt ctggctccga <210> 78 <211> 20 <212> DNA <213> Artificial Sequence <220>	20

<220> <223> Antisense Oligonucleotide	
<400> 79 ggctccaagc ccagcctgtc	20
<210> 80 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 80 tcagcccaag gctctccagc	20
<210> 81 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 81 actcaagaga gcctacttgg	20
<210> 82 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 82 ttacaatcac tcagtgtcac	20
<210> 83 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 83 aagtctcctg acttacaatc	20
<210> 84 <211> 20 <212> DNA <213> Artificial Sequence	

.

<220> <223> Antisense Oligonucleotide	
<400> 84 tacgctgagt ctgaaataaa	20
<210> 85 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 85 tttccaaagt ctgggttgaa	20
<210> 86 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 86 ccaggatttt ggtgacgtac	20
<210> 87 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 87 ggacgcaaga ctaggaagga	20
<210> 88 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 88 cgagctatta ccacagtatt	20
<210> 89 <211> 20 <212> DNA	

<213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 89 ctgaaggtat ccaaggatac	20
cegaaggeae coaaggacae	
<210> 90 <211> 20	
<212> DNA <213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 90 actttcatac catgcacatt	20
<210> 91 <211> 20	
<211> 20 <212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 91	
ccaacactta tgcaaacaca	20
<210> 92	
<211> 20	
<212> DNA <213> Artificial Sequence	
<220> <223> Antisense Oligonucleotide	
<400> 92	
caaactgttc actgactttc	20
<210> 93	
<211> 20 <212> DNA	
<213> Artificial Sequence	
<220>	
<223> Antisense Oligonucleotide	
<400> 93	20
tccatttagg ctgttgaaaa	20
<210> 94	
<211> 3080	
<212> DNA	

<213> Homo sapiens

<400> 94 cacgcgtccg acttgctgaa gaatgactac ttctcggccg aagatgcgga gattgtgtt 60 geetgeecea eecageetga caaggteege aaaattetgg acetggtaca gageaaggge 120 gaggaggtgt ccgagttctt cctctacttg ctccagcaac tcgcagatgc ctacgtggac 180 ctcaggcctt ggctgctgga gatcggcttc tccccttccc tgctcactca gagcaaagtc 240 gtggtcaaca ctgacccagt gagcaggtat acccagcagc tgcgacacca tctgggccgt 300 gactccaagt tegtgetgtg ctatgeecag aaggaggage tgetgetgga ggagatetae 360 atggacacca tcatggagct ggttggcttc agcaatgaga gcctgggcag cctgaacagc 420 ctggcctgcc tcctggacca caccaccggc atcctcaatg agcagggtga gaccatcttc 480 atcctgggtg atgctggggt gggcaagtcc atgctgctac agcggctgca gagcctctgg 540 gccacgggcc ggctagacgc aggggtcaaa ttcttcttcc actttcgctg ccgcatgttc 600 agctgcttca aggaaagtga caggctgtgt ctgcaggacc tgctcttcaa gcactactgc 660 tacccagage gggacecega ggaggtgttt geetteetge tgegetteee ceaegtggee 720 ctcttcacct tcgatggcct ggacgagctg cactcggact tggacctgag ccgcgtgcct 780 gacagetect geceetggga geetgeeeae eeeetggtet tgetggeeaa eetgeteagt 840 gggaagetge teaaggggge tageaagetg etcacagece geacaggeat egaggteeeg 900 cgccagttcc tgcggaagaa ggtgcttctc cggggcttct cccccagcca cctgcgcgcc 960 tatgccagga ggatgttccc cgagcgggcc ctgcaggacc gcctgctgag ccagctggag 1020 gccaacccca acctctgcag cctgtgctct gtgcccctct tctgctggat catcttccgg 1080 tgcttccagc acttccgtgc tgcctttgaa ggctcaccac agctgcccga ctgcacgatg 1140 accetgacag atgtetteet cetggteact gaggtecate tgaacaggat geageecage 1200 agcetggtge ageggaacae aegeageeca gtggagaeee teeaegeegg eegggaeaet 1260 ctgtgctcgc tggggcaggt ggcccaccgg ggcatggaga agagcctctt tgtcttcacc 1320 caggaggagg tgcaggcctc cgggctgcag gagagagaca tgcagctggg cttcctgcgg 1380 getttgeegg agetgggeee egggggtgae eageagteet atgagttttt ceaceteage 1440 ctcctcacct gtaaaactgg gatcccagta tagactttgg aaatcagtag acaccatatg 1500 cttcaaaaaa caggggctat taaaatgaca tcaggagcca gaaagtctca tggctgtgct 1560 ttctcttgaa gtttatacaa caaccagatc accgatgtcg gagccagact gggaaaaaac 1620 aaaataacaa gtgaaggagg gaagtatctc gccctggctg tgaagaacag caaatcaatc 1680 tctgaggttg ggatgtgggg caatcaagtt ggggatgaag gagcaaaagc cttcgcagag 1740 getetgegga accaececag ettgaceace etgagtettg egteeaaegg cateteeaca 1800 gaaggaggaa agagccttgc gagggccctg cagcagaaca cgtctctaga aatactgtgg 1860 ctgacccaaa atgaactcaa cgatgaagtg gcagagagtt tggcagaaat gttgaaagtc 1920 aaccagacgt taaagcattt atggcttatc cagaatcaga tcacagtctt ttgtgtcagt 1980 gtottaaagg ggootgogca ggogggacta toaggagtoo actgootcoa tgatgcaago 2040 cagetteetg tgeagaaggt etggteggea aacteeetaa gtaeeegeta eaattetgea 2100 gaaaaagaat gtgtcttgcg agctgttgta gttacagtaa atacactgtg aagagacttt 2160 attgcctatt ataattattt ttatctgaag ctagaggaat aaagctgtga gcaaacagag 2220 gaggccagcc tcacctcatt ccaacacctg ccatagggac caacgggagc gagttggtca 2280 ccgctctttt cattgaagag ttgaggatgt ggcacaaagt tggtgccaag cttcttgaat 2340 aaaacgtgtt tgatggatta gtattatacc tgaaatattt tetteettet eageaettte 2400 ccatgtattg atactggtcc cacttcacag ctggagacac cggagtatgt gcagtgtggg 2460 atttgactcc tccaaggttt tgtggaaagt taatgtcaag gaaaggatgc accacgggct 2520 tttaatttta atcctggagt ctcactgtct gctggcaaag atagagaatg ccctcagctc 2580 ttagctggtc taagaatgac gatgccttca aaatgctgct tccactcagg gcttctcctc 2640 tgctaggcta ccctcctcta gaaggctgag taccatgggc tacagtgtct ggccttggga 2700 agaagtgatt ctgtccctcc aaagaaatag ggcatggctt gcccctgtgg ccctggcatc 2760 caaatggctg cttttgtctc ccttacctcg tgaagagggg aagtctcttc ctgcctccca 2820 agcagctgaa gggtgactaa acgggcgcca agactcaggg gatcggctgg gaactgggcc 2880 agcagagcat gttggacacc ccccaccatg gtgggcttgt ggtggctgct ccatgagggt 2940 gggggtgata ctactagatc acttgtcctc ttgccagctc atttgttaat aaaatactga 3000 aaaaaaaaa aaaaaaaaa

<210> 95

<211> 4302

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 72

<223> unknown

<400> 95

```
cccgcgtccg cgtccccgga ccatggcgct ctccgggctc ttctctagct ctcagcggct 60
gcgaagtctg tnaacctggt ggccaagtga ttgtaagtca ggagactttc cttcggtttc 120
tgcctttgat ggcaagaggt ggagattgtg gcggcgatta cagaaaacat ctgggaagac 180
aagttgctgt ttttatggga atcgcaggct tggaagagac agaagcaatt ccagaaataa 240
attggaaatt gaagatttaa acaatgttgt tttaaaatat tctaacttca aagaatgatg 300
ccagaaactt aaaaaggggc tgcgcagagt agcaggggcc ctggagggcg cggcctgaat 360
cctgattgcc cttctgctga gaggacacac gcagctgaag atgaatttgg gaaaagtagc 420
cgcttgctac tttaactatg gaagagcagg gccacagtga gatggaaata atcccatcag 480
agteteacce ceacatteaa ttaetgaaaa geaateggga aettetggte aeteacatee 540
gcaatactca gtgtctggtg gacaacttgc tgaagaatga ctacttctcg gccgaagatg 600
cggagattgt gtgtgcctgc cccacccagc ctgacaaggt ccgcaaaatt ctggacctgg 660
tacagagcaa gggcgaggag gtgtccgagt tcttcctcta cttgctccag caactcgcag 720
atgectacgt ggaceteagg cettggetge tggagategg etteteeet teeetgetea 780
ctcagagcaa agtcgtggtc aacactgacc cagtgagcag gtatacccag cagctgcgac 840
accatctggg cogtgactcc aagttcgtgc tgtgctatgc ccagaaggag gagctgctgc 900
tggaggagat ctacatggac accatcatgg agctggttgg cttcagcaat gagagcctgg 960
ctgcttcaag gaaagtgaca ggctgtgtct gcaggacctg ctcttcaagc actactgcta 1080
cccagagegg gaccccgagg aggtgtttgc cttcctgctg cgcttccccc acgtggccct 1140
cttcaccttc gatggcctgg acgagctgca ctcggacttg gacctgagcc gcgtgcctga 1200
cagetectge ecetgggage etgeceaece eetggtettg etggceaaec tgeteagtgg 1260
gaagetgete aagggggeta geaagetget cacagecege acaggeateg aggteeegeg 1320
ccagttcctg cggaagaagg tgcttctccg gggcttctcc cccagccacc tgcgcgccta 1380
tgccaggagg atgttccccg agcgggccct gcaggaccgc ctgctgagcc agctggaggc 1440
caaccccaac ctctgcagcc tgtgctctgt gcccctcttc tgctggatca tcttccggtg 1500
ettecageae tteegtgetg eetttgaagg eteaceaeag etgeeegaet geaegatgae 1560
cctgacagat gtcttcctcc tggtcactga ggtccatctg aacaggatgc agcccagcag 1620
cctggtgcag cggaacacac gcagcccagt ggagaccctc cacgccggcc gggacactct 1680
gtgctcgctg gggcaggtgg cccaccgggg catggagaag agcctctttg tcttcaccca 1740
ggaggaggtg caggcctccg ggctgcagga gagagacatg cagctgggct tcctgcgggc 1800
tttgccggag ctgggccccg ggggtgacca gcagtcctat gagtttttcc acctcaccct 1860
ccaggeette tttacageet tetteetegt getggaegae agggtgggea etcaggaget 1920
gctcaggttc ttccaggagt ggatgccccc tgcgggggca gcgaccacgt cctgctatcc 1980
tecetteete eegtteeagt geetgeaggg eagtggteeg gegegggaag acetetteaa 2040
gaacaaggat cacttccagt tcaccaacct cttcctgtgc gggctgttgk ccaaagccaa 2100
acagaaactc ctgcggcatc tggtgcccgc ggcagccctg aggagaaagc gcaaggccct 2160
gtgggcacac ctgttttcca gcctgcgggg ctacctgaag agcctgcccc gcgttcaggt 2220
cgaaagcttc aaccaggtgc aggccatgcc cacgttcatc tggatgctgc gctgcatcta 2280
cgagacacag agccagaagg tggggcagct ggcggccagg ggcatctgcg ccaactacct 2340
caagetgace tactgcaacg cetgetegge egactgcage geceteteet tegteetgca 2400
tcacttcccc aagcggctgg ccctagacct agacaacaac aatctcaacg actacggcgt 2460
gcgggagctg cagccctgct tcagccgcct cactgttctc agactcagcg taaaccagat 2520
cactgacggt ggggtaaagg tgctaagcga agagctgacc aaatacaaaa ttgtgaccta 2580
tttgggttta tacaacaacc agatcaccga tgtcggagcc aggtacgtca ccaaaatcct 2640
ggatgaatgc aaaggcctca cgcatcttaa actgggaaaa aacaaaataa caagtgaagg 2700
agggaagtat ctcgccctgg ctgtgaagaa cagcaaatca atctctgagg ttgggatgtg 2760
gggcaatcaa gttggggatg aaggagcaaa agcettegea gaggetetge ggaaceaece 2820
cagettgace accetgagte ttgcgtecaa eggeatetee acagaaggag gaaagageet 2880
tgcgagggcc ctgcagcaga acacgtctct agaaatactg tggctgaccc aaaatgaact 2940
caacgatgaa gtggcagaga gtttggcaga aatgttgaaa gtcaaccaga cgttaaagca 3000
tttatggctt atccagaatc asatcacagc twargggact gcccagctgg cagatgcgtt 3060
```

```
acagagcaac actggcataa cagagatttg cctaaatgga aacctgataa aaccagagga 3120
ggccaaagtc tatgaagatg agaagcggat tatctgtttc tgagaggatg ctttcctgtt 3180
catggggttt ttgccctgga gcctcagcag caaatgccac tytgggcagt cttttgtgtc 3240
agtgtcttaa aggggcctgc gcaggcggga ctatcaggag tccactgcct ccatgatgca 3300
agccagcttc ctgtgcagaa ggtctggtcg gcaaactccc taagtacccg ctacaattct 3360
gcagaaaaag aatgtgtctt gcgagctgtt gtagttacag taaatacact gtgaagagac 3420
tttattgcct attataatta tttttatctg aagctagagg aataaagctg tgagcaaaca 3480
gaggaggcca gcctcacctc attccaacac ctgccatagg gaccaacggg agcgagttgg 3540
tcaccgctct tttcattgaa gagttgagga tgtggcacaa agttggtgcc aagcttcttg 3600
aataaaacgt gtttgatgga ttagtattat acctgaaata ttttcttcct tctcagcact 3660
ttcccatgta ttgatactgg tcccacttca cagctggaga caccggagta tgtgcagtgt 3720
gcttttaatt ttaatcctgg agtctcactg tctgctggca aagatagaga atgccctcag 3840
ctcttagctg gtctaagaat gacgatgcct tcaaaatgct gcttccactc agggcttctc 3900
ctctgctagg ctaccctcct ctagaaggct gagtaccatg ggctacagtg tctggccttg 3960
ggaagaagtg attctgtccc tccaaagaaa tagggcatgg cttgcccctg tggccctggc 4020
atccaaatgg ctgcttttgt ctcccttacc tcgtgaagag gggaagtctc ttcctgcctc 4080
ccaagcagct gaagggtgac taaacgggcg ccaagactca ggggatcggc tgggaactgg 4140
gccagcagag catgttggac acccccacc atggtgggct tgtggtggct gctccatgag 4200
ggtgggggtg atactactag atcacttgtc ctcttgccag ctcatttgtt aataaaatac 4260
tgaaaaccca aaaaaaaaaa aaaaaaaaa aaaaaagggc gg
<210> 96
<211> 1400
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 1394
<223> unknown
<400> 96
cacgcgtccg cgctactgcg ggagcagcgt cctcccgggc cacggcgctt cccggccccg 60
gcgtccccgg accatggcgc tctccgggct cttctctagc tctcagcggc tgcgaagtct 120
gtaaacctgg tggccaagtg attgtaagtc aggagacttt ccttcggttt ctgcctttga 180
tggcaagagg tggagattgt ggcggcgatt acagaaaaca tctgggaaga caagttgctg 240
tttttatggg aatcgcaggc ttggaagaga cagaagcaat tccagaaata aattggaaat 300
tgaagattta aacaatgttg ttttaaaata ttctaacttc aaagaatgat gccagaaact 360
taaaaagggg ctgcgcagag tagcaggggc cctggagggc gcggcctgaa tcctgattgc 420
ccttctgctg agaggacaca cgcagctgaa gatgaatttg ggaaaagtag ccgcttgcta 480
ctttaactat ggaagagcag ggccacagtg agatggaaat aatcccatca gagtctcacc 540
cccacattca attactgaaa agcaatcggg aacttctggt cactcacatc cgcaatactc 600
agtgtctggt ggacaacttg ctgaagaatg actacttctc ggccgaagat gcggagattg 660
tgtgtgcctg ccccacccag cctgacaagg tccgcaaaat tctggacctg gtacagagca 720
agggcgagga ggtgtccgag ttcttcctct acttgctcca gcaactcgca gatgcctacg 780
tggacctcag gccttggctg ctggagatcg gcttctcccc ttccctgctc actcagagca 840
aagtcgtggt caacactgac ccaggtagga gtcagcccca gcaagaccgc aggcaccagt 900
gcaagcaggg ccctgggggg tttggtaatg gctgggccag ccctgagtgc cacctcagga 960
agcaggccca ggtgctattt tgattttaga aaggaacagc tgaatcctgt ctcccaagtg 1020
cagcccaggt ggctgcgatt gaactgccca cacctcgatg gtctggttta tagaggggcc 1080
tttggaagta tgggaatggc ctgtgttctg accecttgct ttcttcctat tctgacatat 1140
gtagacattt taatggttgc acaaattcaa ggttgtattt ttttttcttt aaaaaaatct 1200
ttagctggac atggtagcac acacctgtag ttccagctac tcaggaggct gaggcaagag 1260
gactgcttga gccccagagt ctaaggctgc agcgagctat gattgtgccc ctacactcca 1320
aaaaaaaa aaangggcgg
                                                               1400
```